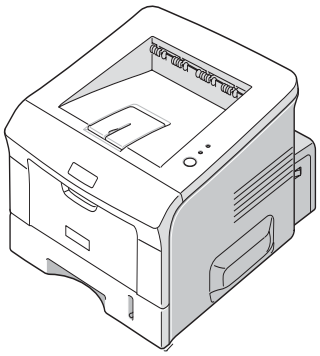
BP20N/BP20

User's Guide



Read this manual carefully before you use this machine and keep it handy for future reference. For safe and correct use, please be sure to read the Safety Information in this manual before using the machine.

Contents of this manual are subject to change without prior notice. In no event will the company be liable for direct, indirect, incidental or consequential damages as a result of handling or operating the machine.

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Safety Information

When using this machine, the following safety precautions should always be followed.

Safety During Operation

In this manual, the following important symbols are used:

⚠ ***WARNING:***

Indicates a potentially hazardous situation which, if instructions are not followed, could result in death or serious injury.

⚠ ***CAUTION:***

Indicates a potentially hazardous situation which, if instructions are not followed, may result in minor or moderate injury or damage to property.

⚠ *WARNING:*

- ***Connect the power cord directly into a wall outlet and never use an extension cord.***
- ***Disconnect the power plug (by pulling the plug, not the cable) if the power cable or plug becomes frayed or otherwise damaged.***
- ***To avoid hazardous electric shock or laser radiation exposure, do not remove any covers or screws other than those specified in this manual.***
- ***Turn off the power and disconnect the power plug (by pulling the plug, not the cable) if any of the following occurs:***
 - ***You spill something into the machine.***
 - ***You suspect that your machine needs service or repair.***
 - ***The external housing of your machine has been damaged.***
- ***Do not incinerate spilled toner or used toner. Toner dust might ignite when exposed to an open flame.***
- ***Disposal can take place at our authorized dealer.***
- ***Dispose of the used toner bottle in accordance with the local regulations.***
- ***Keep the machine away from flammable liquids, gases, and aerosols. A fire or an electric shock might occur.***

⚠ *CAUTION:*

- *Protect the machine from dampness or wet weather, such as rain and snow.*
- *Unplug the power cord from the wall outlet before you move the machine. While moving the machine, you should take care that the power cord will not be damaged under the machine.*
- *When you disconnect the power plug from the wall outlet, always pull the plug (not the cable).*
- *Do not allow paper clips, staples, or other small metallic objects to fall inside the machine.*
- *Keep toner (used or unused) and toner bottle out of the reach of children.*
- *Be careful not to cut yourself on any sharp edges when you reach inside the product to remove misfed sheets of paper or masters.*
- *For environmental reasons, do not dispose of the machine or expended supply waste at household waste collection points. Disposal can take place at an authorized dealer.*
- *The inside of the machine could be very hot. Do not touch the parts with a label indicating the " ". Otherwise, an injury might occur.*

Power Supply
The socket-outlet shall be installed near the product and shall be easily accessible.

Ozone Safety
This product generates ozone during operation.
Normally, the ozone level is safe for operators. If ozone odor may appear, ventilate the room.

Laser Safety:

This equipment is considered a class 1 laser device. This equipment contains a 5 milliwatt, 770-795 nanometer wavelength, AlGaAs laser diode. The following marking is attached on the back of the equipment.



Caution:

Use of controls or adjustment or performance of procedures other than those specified in this User's Guide might result in hazardous radiation exposure.

For North America

Laser Safety:

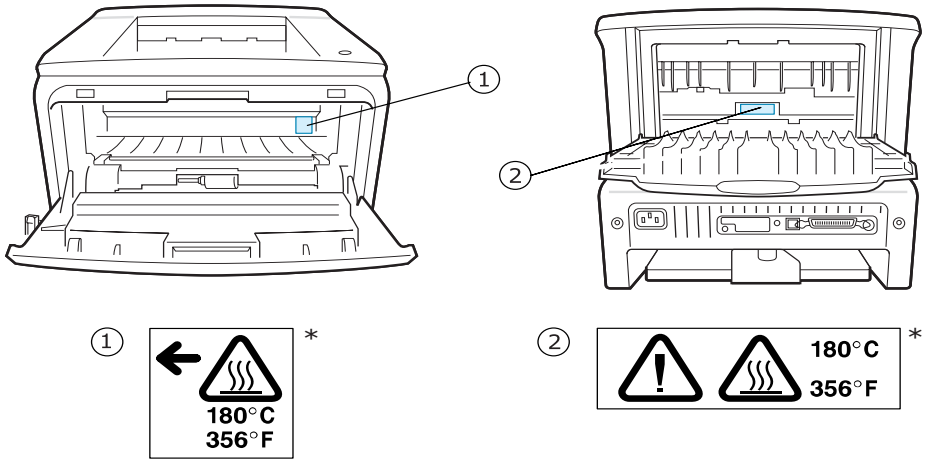
This equipment complies with requirements of 21 CFR subchapter J for class 1 laser products. This equipment contains a 5 milliwatt, 770-795 nanometer wavelength, AlGaAs laser diode.

Caution:

Use of controls or adjustment or performance of procedures other than those specified in this User's Guide might result in hazardous radiation exposure.

Positions of Labels and Hallmarks for ⚠ WARNING and ⚠ CAUTION Labels

This machine has labels for ⚠WARNING and ⚠CAUTION at the positions shown below. For safety, please follow the instructions and handle the machine as indicated.



*This label is stuck to hot surfaces. Be careful not to touch these areas.

In accordance with IEC 60417, this machine uses the following symbols for the main power switch:

- **| means POWER ON.**
- **○ means POWER OFF.**

Correct Disposal of This Product (Waste Electrical & Electronic Equipment)

(Applicable in the European Union and other European countries with separate collection systems)



This marking shown on the product or its literature, indicates that it should not be disposed with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take this item for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract. This product should not be mixed with other commercial wastes for disposal.

NOTICE

Note to users in the United States of America

Notice:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio /TV technician for help.

Caution

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note:

This Class B digital apparatus complies with Canadian ICES-003.

CE

Declaration of Conformity

Notice to Users in EEA Countries

The Product complies with the requirements of the EMC Directive 89/336/EEC and its amending directives and the Low Voltage Directive 73/23/EEC and its amending directives.

1 INTRODUCTION

Congratulations on the purchase of your printer!

This chapter includes:

- **Special Features**
- **Printer Components**
- **Understanding the Control Panel**

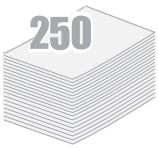
Special Features

Your new printer is equipped with special features that improve the print quality, giving you a competitive edge. You can:



Print with excellent quality and high speed

- You can print at up to **1200 dpi** effective output. See page 4.8.
- Your printer prints up to **22 pages-per-minute (Letter size)**, up to **20 pages-per-minute (A4 size)**.



Handle paper flexibly

- A 50-sheet **Multi-Purpose Tray** supports letterhead, envelopes, labels, transparencies, custom-sized materials, postcards, and heavy paper.
- **Standard 250-sheet input tray** (Tray1) and **optional 250-sheet input tray** (Tray2) supports all standard sizes of paper.
- Two output tray; select either **the top output (face-down)** or **the rear output tray (face-up)** for the most convenient access.
- **Straight-through paper path** capability from the Multi-Purpose Tray to the rear output tray.



Create professional documents

- You can customise your documents using **Watermarks**, such as "Confidential". See page 4.21.
- Print **Posters**. The text and pictures of each page of your document are magnified and printed across the selected sheet of paper. After the document has printed, trim off the white edges of each sheet. Tape the sheets together to form a poster. See page 4.16.



Save time and money

- This printer allows you to use **Toner Save mode** to save toner. See page 4.11.
- You can print multiple pages on one single sheet of paper to save paper (**N-Up printing**). See page 4.15.
- Preprinted forms and letterheads can be printed on plain paper. See "Using Overlays" on page 4.24.
- This printer automatically **conserves electricity** by substantially reducing power consumption when not printing.
- This printer meets **Energy Star** guidelines for energy efficiency.



Print in various environments

- You can print in **Windows 95/98/Me/NT 4.0/2000/XP**.
- Your printer comes with both **Parallel** and **USB** interfaces.
- You can print in a network environment. Only the BP-20N comes with a built-in network interface, 10/100 Base TX.

Expand printer capacity

- This printer has 16 MB of memory which can be expanded to **144 MB**.
- **Network interface** enables network printing.

Printer Features

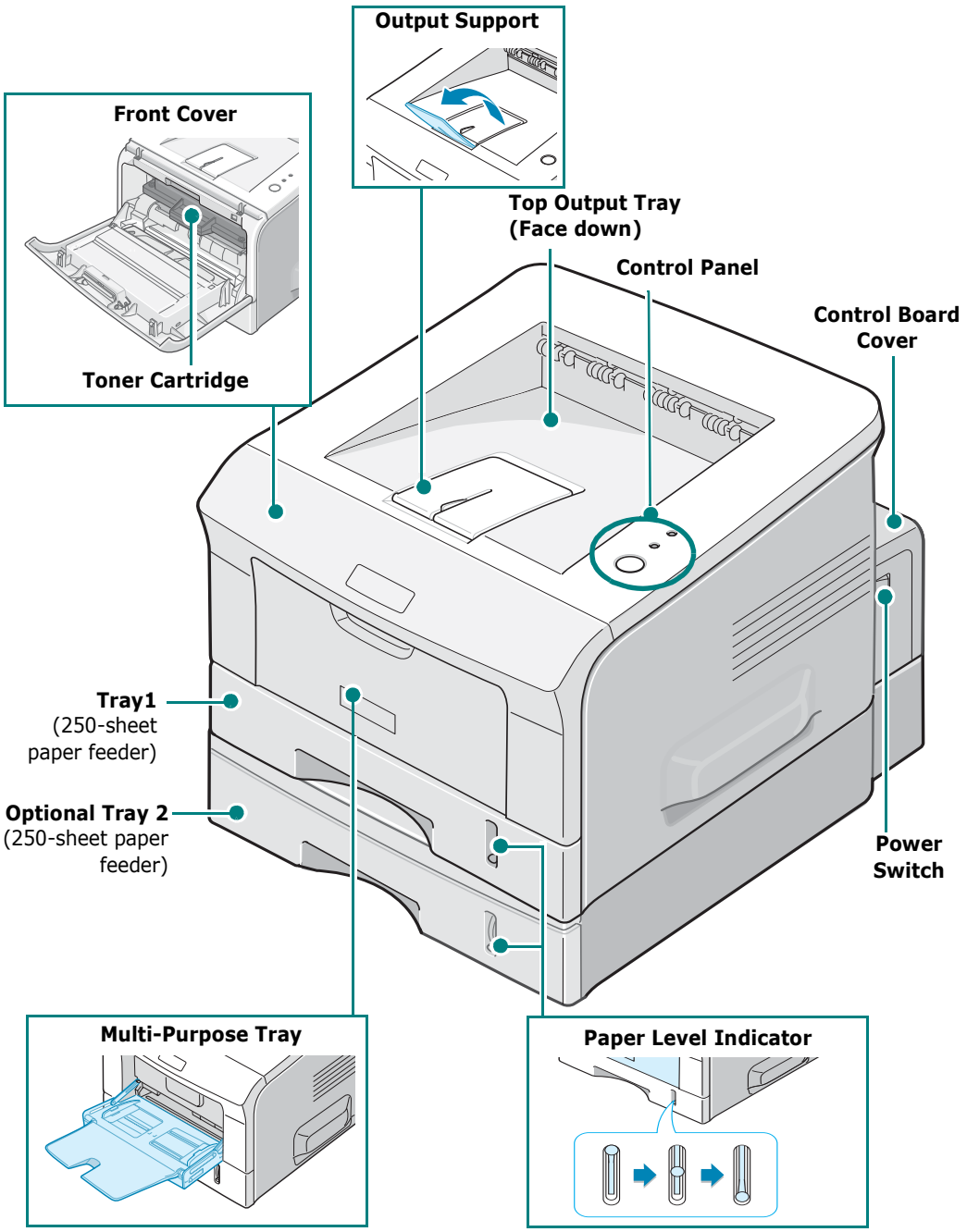
The table below lists a general overview of features supported by your printer.

(S: Standard)

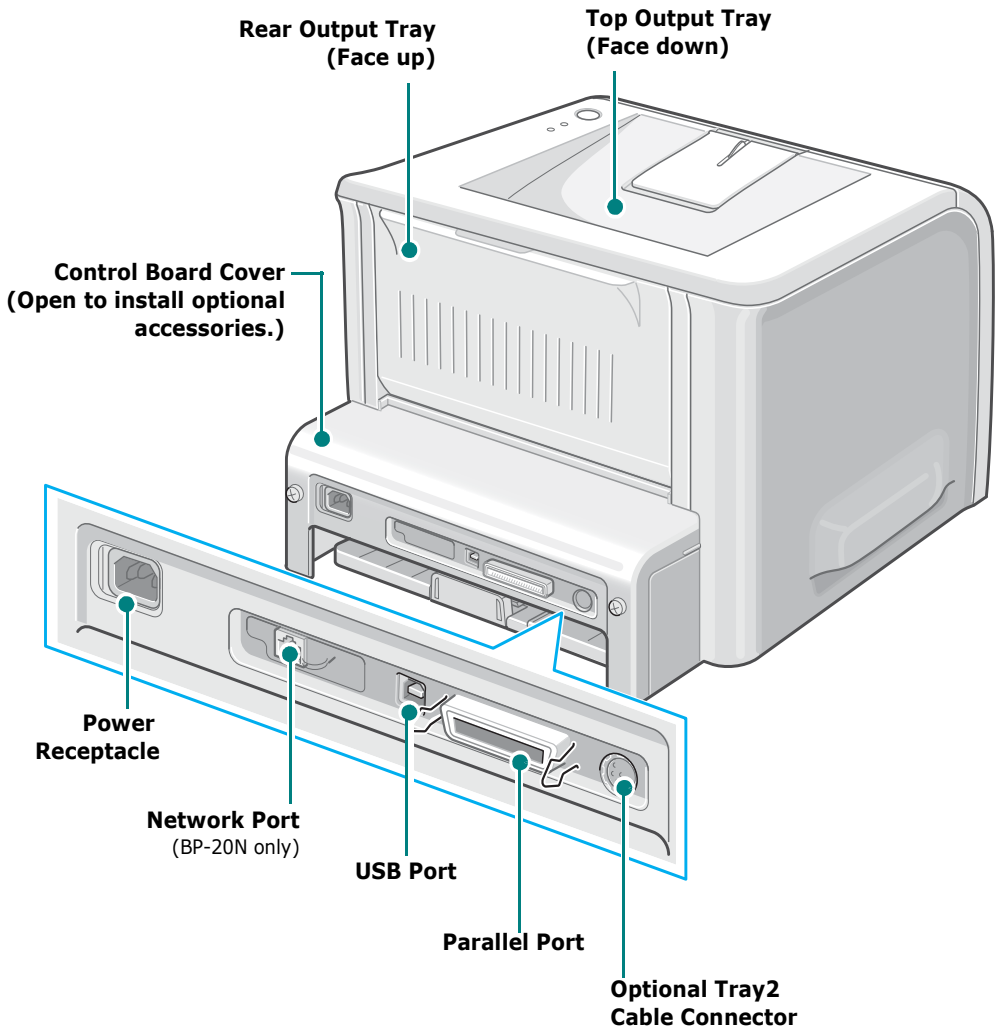
Features	BP-20	BP-20N
IEEE 1284 Parallel	S	S
USB 2.0	S	S
Network Interface (Ethernet 10/100 Base TX)		S

Printer Components

Front View

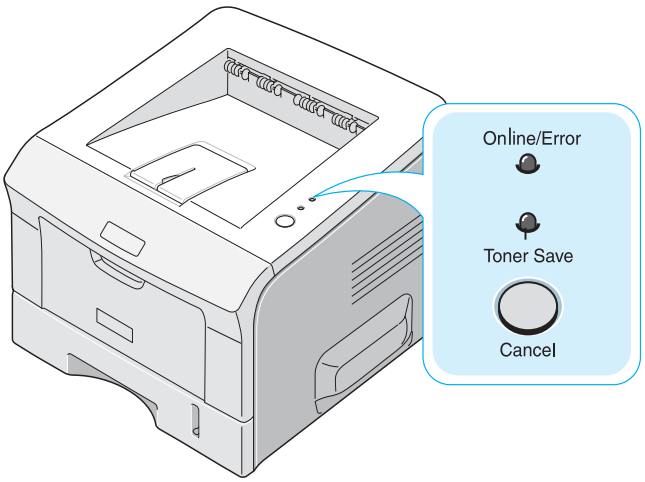


Rear View



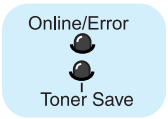
*The figure above shows a BP-20N.

Understanding the Control Panel



Online/Error and Toner Save LEDs

LED	Description
Online/Error	If the **Online/Error** lights green, the printer is ready to print.
	If the **Online/Error** lights red, the printer is experiencing an error, such as jammed paper, no paper, open cover, or uninstalled toner cartridge. See "Troubleshooting Error Messages" on page 6.21.
	If you press the **Cancel** button while the printer is receiving data, the **Online/Error** LED blinks red to cancel printing.
	In Manual Feed mode, if there is no paper in the Multi-purpose tray, the **Online/Error** LED blinks red. Load paper into the Multi-purpose tray and the LED stops blinking.
	If the printer is receiving data, the **Online/Error** LED slowly blinks green. If the printer is printing the received data, the **Online/Error** LED blinks green fast.
	If the toner cartridge is near the end of its life, the **Online/Error** LED lights orange.
	If the toner cartridge is empty, the **Online/Error** LED blinks orange.
	If the installed toner cartridge is not designed for your printer, the **Online/Error** LED blinks orange and red alternately.

LED	Description
	If you press the **Cancel** button for 0.5 second in Ready mode, this LED lights and the Toner Save mode is enabled. If you press this button once again, this LED turns off and the Toner Save mode is disabled.
	If the **Online/Error** and **Toner Save** LEDs blink, your system has some problem. To solve the problem, see "Troubleshooting Error Messages" on page 6.21.

Cancel button

Function	Description
Printing demo page	In Ready mode, press and hold this button for about 2 seconds until all LEDs blink slowly, and release.
Printing configuration sheets	In Ready mode, press and hold this button for about 6 seconds until all LEDs blink fast, and release. If your printer has a network card, the network configuration sheet prints out with a printer configuration sheet.
Network card Default Setting (When you use the Network card)	In Ready mode, press and hold this button for about 20 seconds until all LEDs blink slowly, and release. This item restores the factory default of the network configuration. This setting will only take effect after you have reset the printer.
Manual Feeding	Press this button each time you load paper in the Multi-purpose tray, when you have selected **Manual Feed** for **Source** from your software application. For detailed information, see "Using the Manual Feed Mode" on page 3.12.
Cleaning inside printer	In Ready mode, press and hold this button for about 10 seconds until all LEDs turn on, and release. After cleaning the printer, one "cleaning sheet" (see page 5.7) is printed.

Function	Description
Canceling print job	Press this button during printing. The **Online/Error** LED blinks while the print job is cleared from both the printer and the computer, and then the printer returns to Ready mode. This may take some time depending on the size of the print job.
Toner Save mode on/off	In Ready mode, press this button to turn the Toner Save mode on or off. For detailed information, see "Using the Toner Save Mode" on page 4.11.

2 Setting Up Your Printer

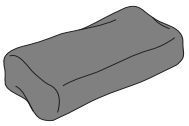
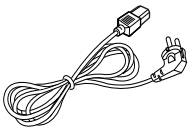
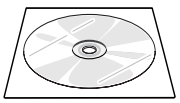
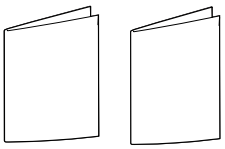
This chapter provides step by step information on setting up your printer.

This chapter includes:

- **Unpacking**
- **Installing the Toner Cartridge**
- **Loading Paper**
- **Connecting a Printer Cable**
- **Turning the Printer On**
- **Printing a Demo Page**
- **Installing Printer Software**
- **Reinstalling Printer Software**
- **Removing Printer Software**
- **Using the Set IP (BP20N only)**

Unpacking

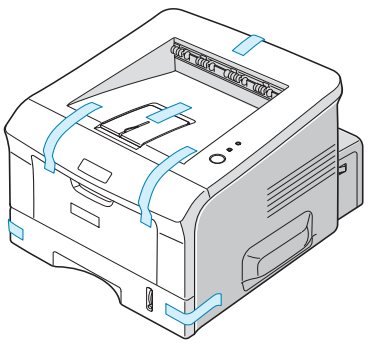
1 Remove the Printer and all accessories from the packing carton. Make sure that the printer has been packed with the following items:

 Toner Cartridge	 Power Cord
 CD-ROM	 Safety Information Quick Install Guide

NOTES:

- If any items are missing or damaged, notify your dealer immediately.
- **Components may differ from one country to another.**
- The CD-ROM contains the printer driver, the User's Guide, and the Adobe Acrobat Reader programme.

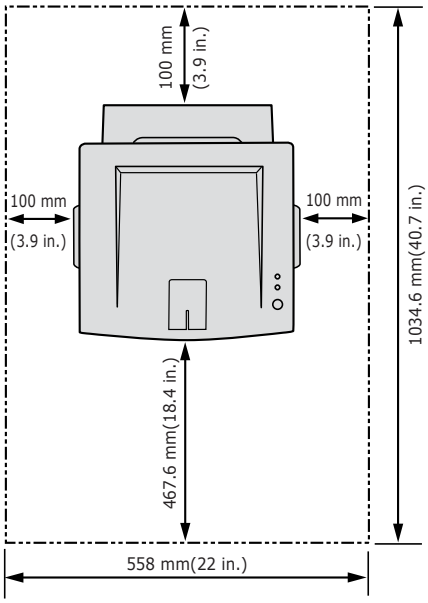
2 Carefully remove all of the packing tape from the printer.



Selecting a Location

Select a level, stable place with adequate space for air circulation. Allow extra space for opening covers and tray(s). The area should be well-ventilated and away from direct sunlight or sources of heat, cold, and humidity. See the image below for clearance space. Do not place the printer close to the edge of your desk or table.

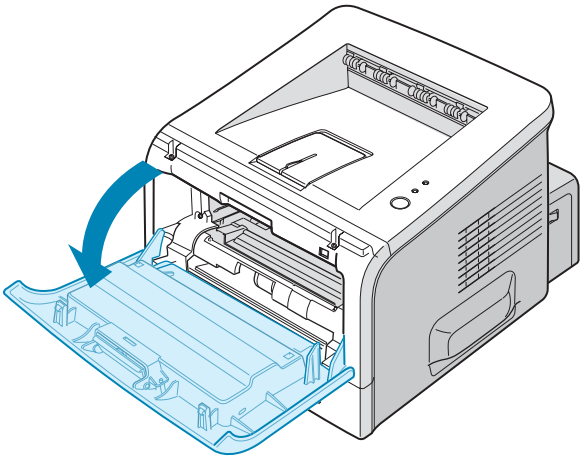
Clearance Space



- **Front**: 467.6 mm
 (enough space so that tray(s) can be removed)
- **Back**: 100 mm
 (enough space to allow opening of the rear out tray)
- **Right**: 100 mm (enough space for ventilation)
- **Left**: 100 mm

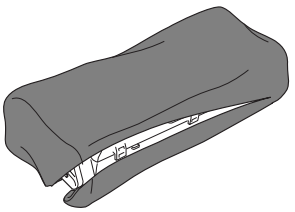
Installing the Toner Cartridge

1 Grasp the front cover and pull it toward you to open.



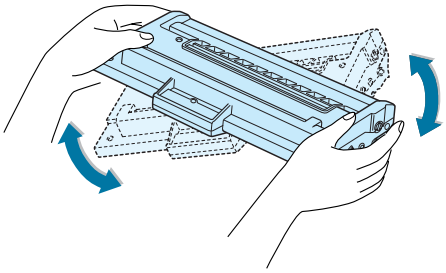
NOTE: Because the printer is very light, it may move when you use it; for example, when opening/closing the tray or installing/removing the toner cartridge. Be careful not to move the printer.

2 Remove the toner cartridge from its bag and remove the paper covering the cartridge.



Don’t use a knife or other sharp object as it might scratch the drum of the cartridge.

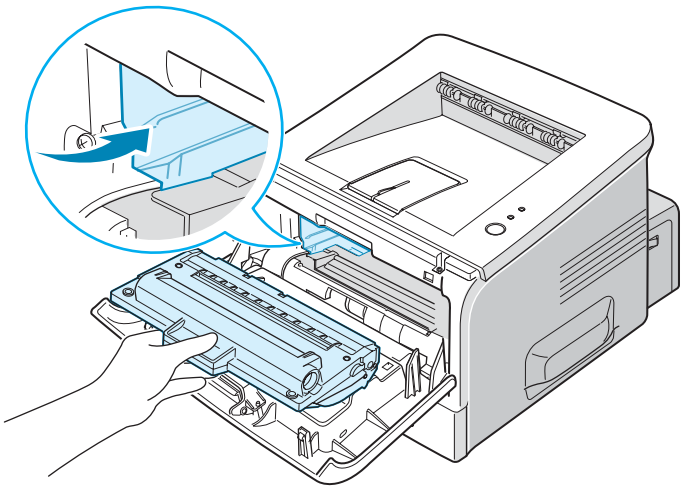
3 Gently shake the cartridge from side to side to distribute the toner evenly inside the cartridge.



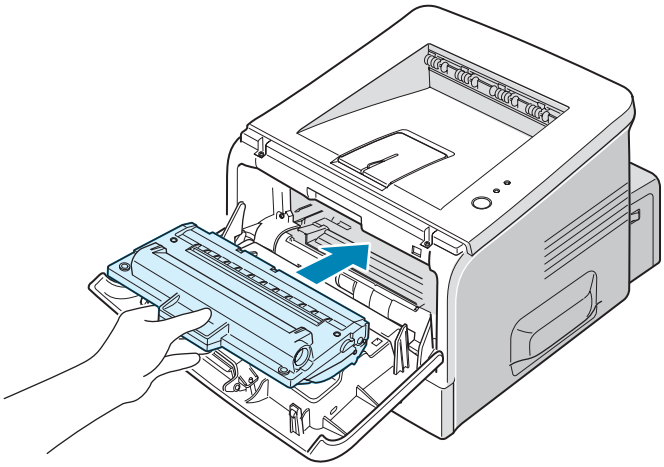
NOTES:

- To prevent damage, do not expose the toner cartridge to light for more than a few minutes. Cover it with a piece of paper if left exposed for more than a few minutes and keep it in a flat and clean place.
- If toner gets on your clothing, wipe it off with a dry cloth and wash clothing in cold water. Hot water sets toner into fabric.

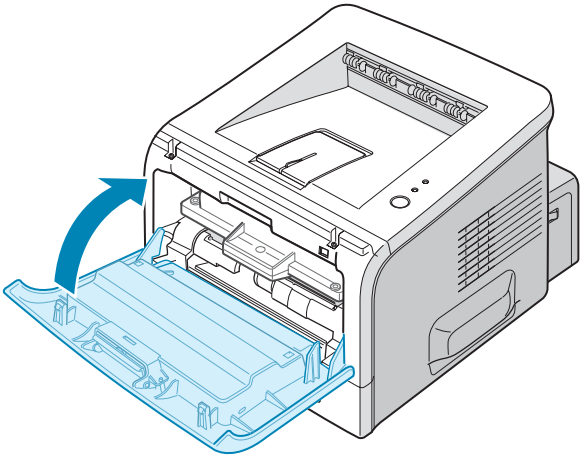
4 Locate the cartridge slots inside the printer, one on each side.



5 Grasp the handle and insert the cartridge into the printer until it snaps into place.



6 Close the front cover. Make sure that the cover is securely closed.

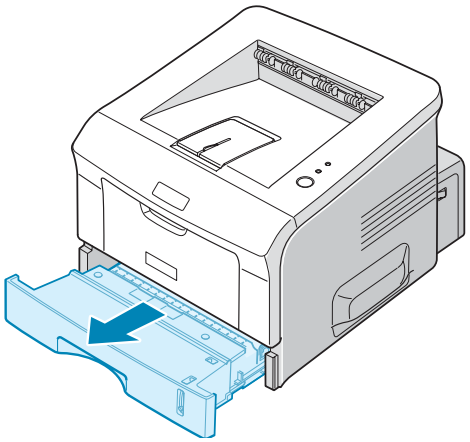


NOTE: When printing text at 5% coverage, you can expect a toner cartridge life of approximately 5,000 pages.(3,500 pages for the toner cartridge that is shipped with the machine)

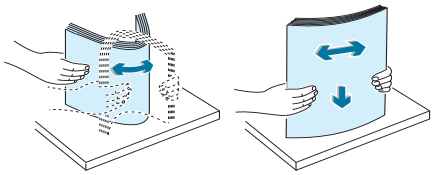
Loading Paper

You can load approximately 250 sheets of paper in the tray.

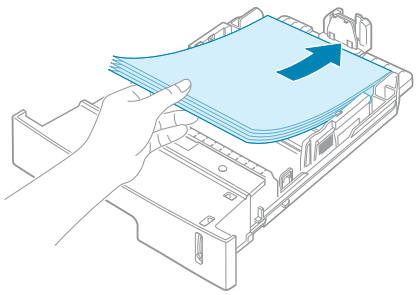
1 Pull the tray out of the printer.



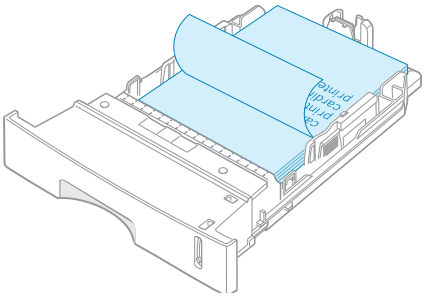
2 Prepare a stack of paper for loading by flexing or fanning the paper back and forth. Straighten the edges on a level surface.



3 Load paper **with the print side facing down**.



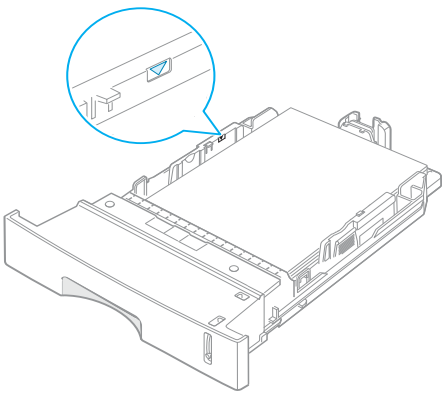
You can load previously printed paper. The printed side should be facing up with an uncurled edge on top. If you experience problems with paper feed, turn the paper around.



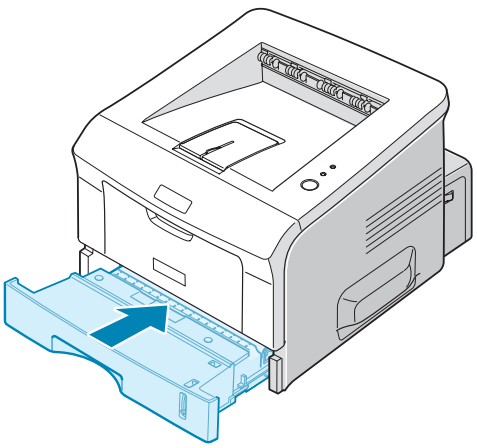
Make sure that all four corners are flat in the tray.

NOTE: If you want to change the paper size in the tray, see "Changing the Paper Size in the Paper Tray" on page 2.9.

4 Pay attention to the paper limit mark on the left inside wall of the tray. Paper overloading may cause paper jams.



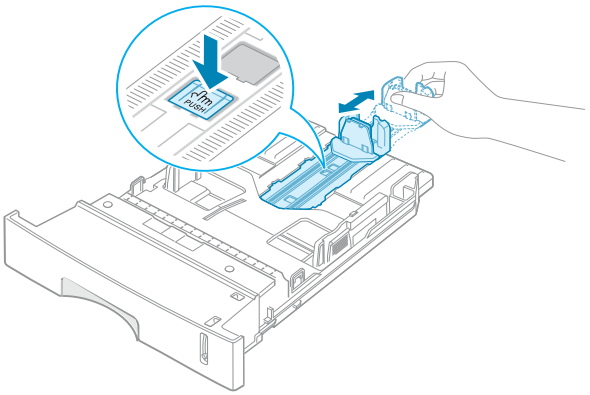
5 Slide the tray back into the printer.



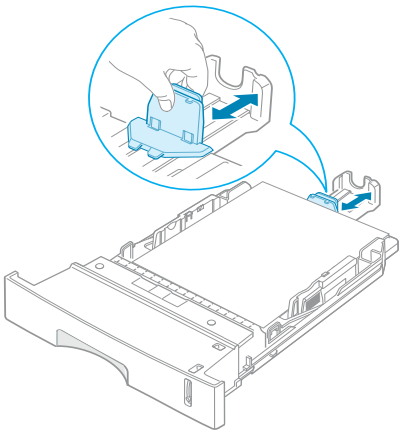
Changing the Paper Size in the Paper Tray

To load longer sizes of paper, you need to adjust the paper guides to extend the paper tray.

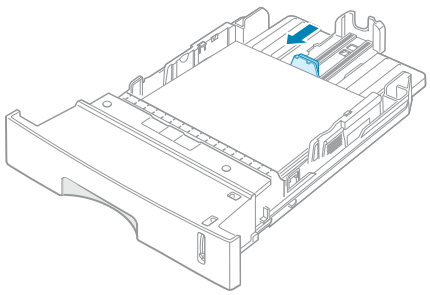
1 Pressing and unlatching the guide lock, slide the paper length guide out completely to extend the paper tray to its full length.



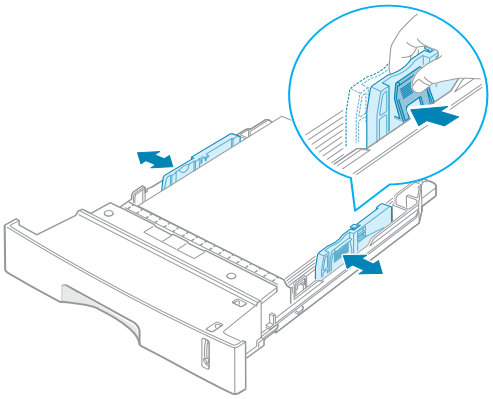
2 After inserting paper into the tray, slide in the guide until it lightly touches the end of the paper stack.



For the paper smaller than Letter, adjust the front paper length guide.

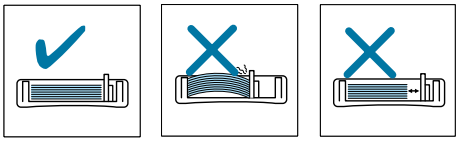


3 Pinching the paper width guide as shown, move it toward the stack of paper until it lightly touches the side of the stack.



NOTES:

- Do not push the paper width guide far enough to cause the materials to warp.
- If you do not adjust the paper width guide, it may cause paper jams.



Connecting a Printer Cable

For Local Printing

To print from your computer in a local environment, you need to connect your printer to the computer with either a parallel interface cable or a Universal Serial Bus (USB) cable.

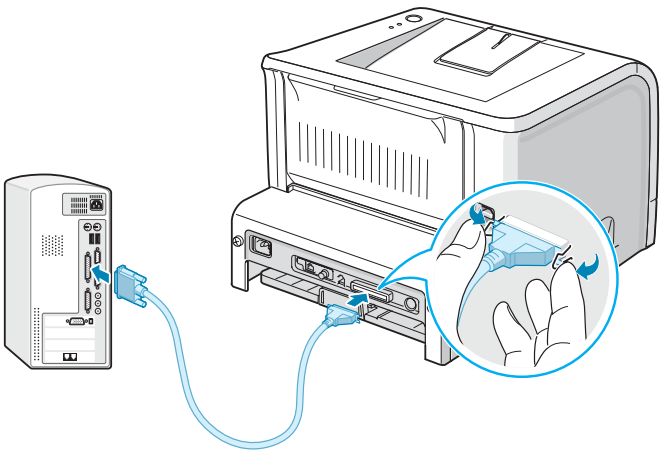
Using a Parallel Cable

NOTE: To connect the printer to the parallel port of the computer requires a certified parallel cable. You will need to buy an IEEE1284 compliant cable.

1. Make sure that both the printer and the computer are turned off.

2. Plug the parallel printer cable into the connector on the back of the printer.

 Push the metal clips down to fit inside the notches on the cable plug.



3. Connect the other end of the cable to the parallel interface port on your computer, and tighten the screws.

 See your computer User's Guide, if you need help.

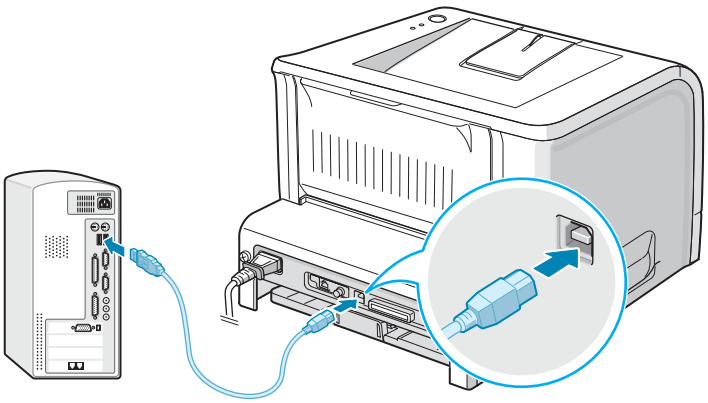
Using a USB Cable

NOTE: Connecting the printer to the USB port of the computer requires a certified USB cable. You will need to buy a USB 2.0 compliant cable that is within 3 m in length.

1. Make sure that both the printer and the computer are turned off.

2. Plug the USB printer cable into the connector on the back of the printer.

3. Connect the other end of the cable to the USB port on your computer.



See your computer User's Guide, if you need help.

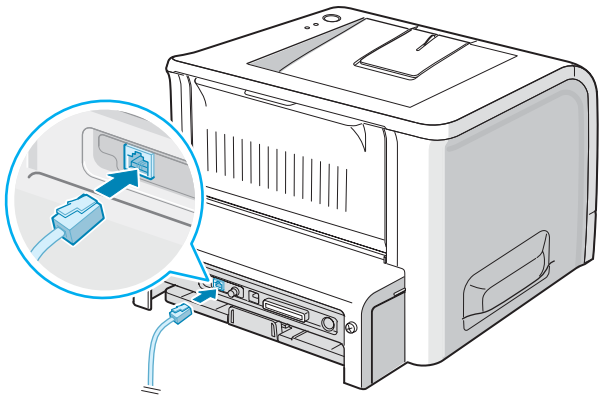
NOTE: For using a USB cable, you must be running Windows 98/Me/2000/XP.

For Network Printing

You can attach your BP20N printer to a network using an Ethernet cable (UTP cable with RJ.45 connector).

1 Make sure that both the printer and the computer are turned off.

2 Plug one end of the Ethernet cable into the Ethernet network port on the Printer.



To the network LAN connection

3 Plug the other end of the cable into a network LAN connection.

See your computer User's Guide, if you need help.

Supported Operating Systems

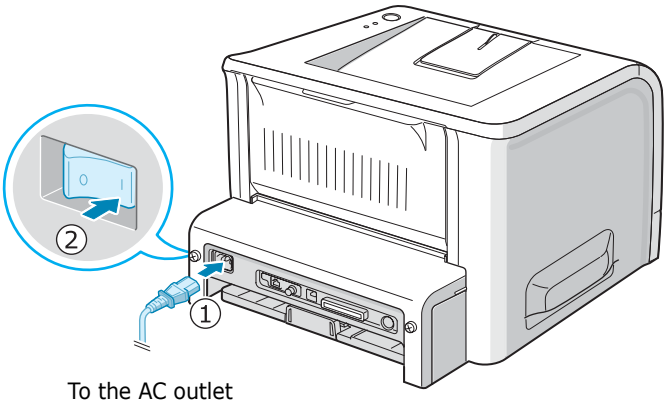
Item	Requirements
Network Interface	10/100 Base-TX (standard for BP20N)
Network Operating System	• Windows 95/98/Me/NT 4.0/2000/XP
Network Protocols	• TCP/IP
Dynamic Addressing Server	• DHCP, BOOTP

• TCP/IP: Transmission Control Protocol/Internet Protocol
• DHCP: Dynamic Host Configuration Protocol
• BOOTP: Bootstrap Protocol

Turning the Printer On

1 Plug the power cord into the power receptacle on the back of the printer.

2 Plug the other end into a properly grounded AC outlet and turn on the printer using the power switch.



To the AC outlet

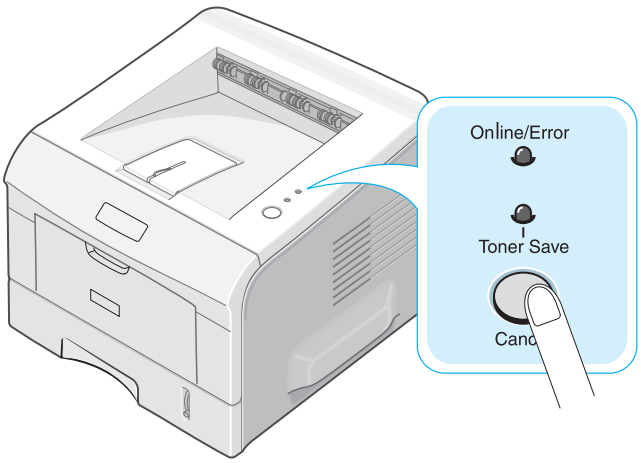
CAUTIONS:

- The fusing area at the rear portion of the inside of your printer is hot when powered. Be careful not to be burned when accessing this area.
- Do not disassemble the printer when it is powered. Doing so may give you an electric shock.

Printing a Demo Page

Print a demo page to make sure that the printer is operating correctly.

1 Hold down the **Cancel** button for about 2 seconds to print a demo page.



2 A demo page showing the printer's features and capabilities prints out.

Installing Printer Software

The supplied CD-ROM contains Windows printing software, DOS RCP, an on-line User's Guide and Acrobat Reader to view the User's Guide.

If you are printing from Windows:

You can install the following printer software using the CD-ROM.

- **BP20 Series PCL6 printer driver** for Windows. Use this driver to take full advantage of your printer's features. See page 2.18.
- **Status Monitor** appears when printing error occurs. See page 4.29.
- **Remote Control Panel** for DOS applications. For information about using the program, refer to Appendix A in the User's Guide.
- The **Set IP** is for setting IP address. It will help for user to easily set IP address. See page 2.31

Printer Driver Features

Your printer drivers will support the following standard features:

- Paper source selection
- Paper size, orientation and media type
- number of copies

The table below lists a general overview of features supported by your printer drivers.

Driver Feature	PCL6 driver		
	Win 2000/XP	Win 9x	Win NT4.0
Toner Save	Y	Y	Y
Print quality option	Y	Y	Y
Poster printing	Y	Y	Y
Multiple pages per sheet (N-up)	Y	Y	Y
Scale printing	Y	Y	Y
Fit to page printing	Y	Y	Y
Different source for first page	Y	Y	Y
Watermark	Y	Y	Y
Overlay	Y	Y	Y
Print order	Y	Y	Y

Installing Printer Software in Windows

System Requirements

Verify the following:

- At least **32 MB** (Windows 9x/Me), **64 MB** (Windows 2000/NT), **128 MB** (Windows XP) or more of RAM is installed on your PC.
- There is at least **300 MB** of free disk space on your PC.
- All applications are closed on your PC before beginning installation.
- You are using Windows 95, Windows 98, Windows Me, Windows NT 4.0, Windows 2000, or Windows XP.
- You are using at least Internet Explorer 5.0.

Installing Software for Local Printing

A local printer is a printer directly attached to your computer using the printer cable supplied with your printer, such as a USB or parallel cable. If your printer is attached to a network, skip this step and go to "Installing Software for Network Printing" on page 2.24.

You can install the printer software using the typical or custom method.



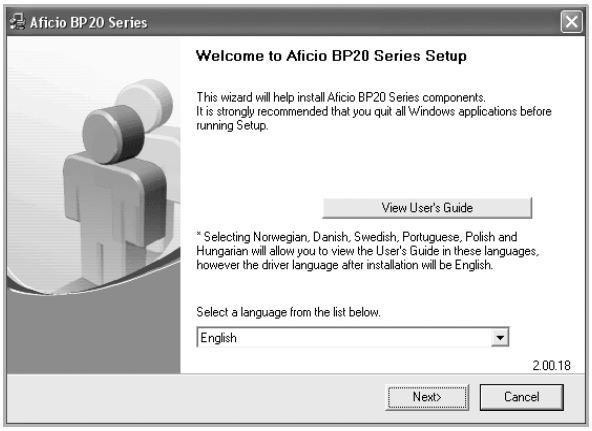
NOTE: If the "New Hardware Wizard" window appears during the installation procedure, click x in the upper right corner of the box to close the window, or click **Cancel**.

Typical Installation

This is recommended for most users. All components necessary for printer operations will be installed.

1. Make sure that the printer is connected to your computer and powered on.
2. Insert the supplied CD-ROM into your CD-ROM drive.The CD-ROM should automatically run, and an installation window appears.

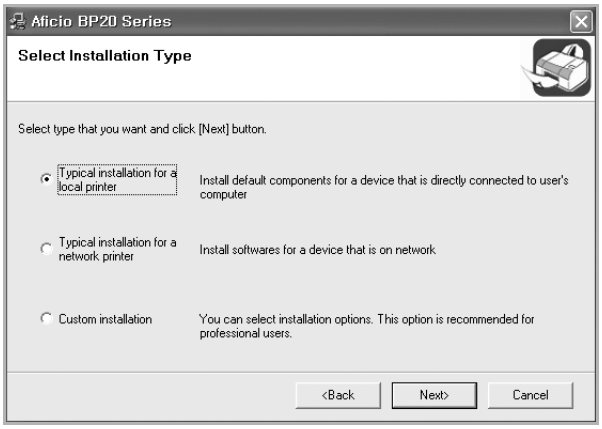
If the installation window does not appear, click **Start** and then **Run**. Type **X:\Setup.exe**, replacing "**X**" with the letter which represents your drive and click **OK**.



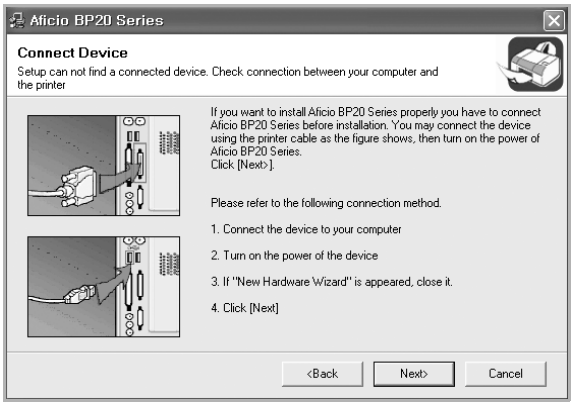
3 Click **Next**.

- If necessary, select a language from the drop-down list.
- **View User's Guide**: Allows you to view the User's Guide and System Administration Guide. If your computer doesn't have Adobe Acrobat, click on this option and it will automatically install Adobe Acrobat Reader for you.

4 Select **Typical installation for a local printer**. Click **Next**.



NOTES: If your printer is not already connected to the computer, the following window will appear.



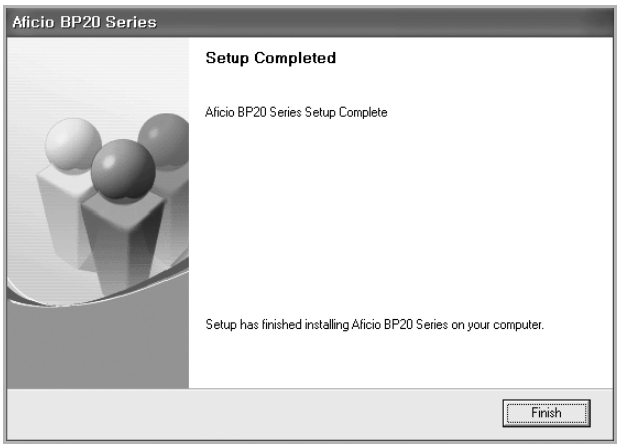
- After connecting the printer, click **Next**.
- If you don't want to connect the printer at this time, click **Next**, and **No** on the following screen. Then the installation will start and a test page will not be printed at the end of the installation.

5 After the installation is finished, a window asking you to print a test page appears. If you choose to print a test page, select the checkbox and click **Next**.

Otherwise, just click **Next** and skip to step 7.

6 If the test page prints out correctly, click **Yes**.
If not, click **No** to reprint it.

7 Click **Finish**.



NOTE: After setup is complete, if your printer driver doesn't work properly, reinstall the printer driver. See "Reinstalling Printer Software" on page 2.29.

Custom Installation

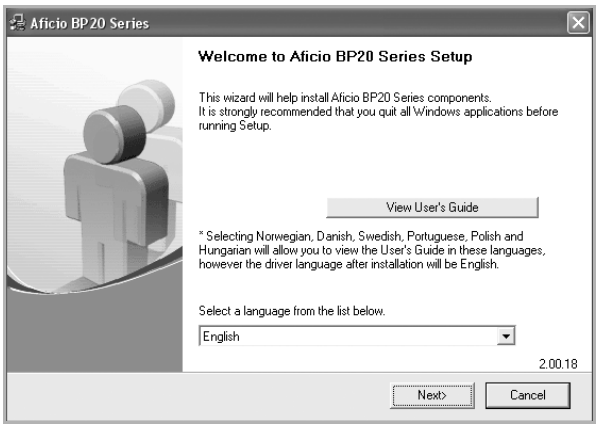
You can choose individual components to install.

1 Make sure that the printer is connected to your computer and powered on.

2 Insert the supplied CD-ROM into your CD-ROM drive.

The CD-ROM should automatically run, and an installation window appears.

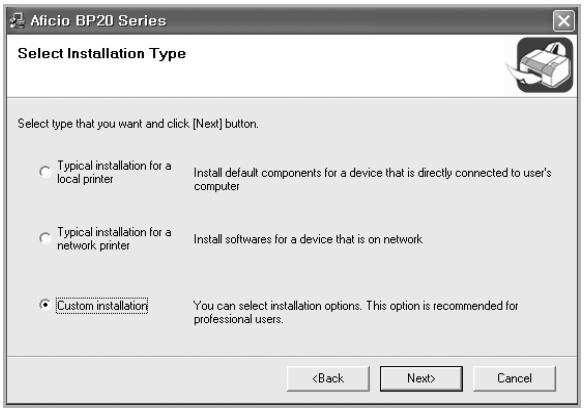
If the installation window does not appear, click **Start** and then **Run**. Type **X:\Setup.exe**, replacing "**X**" with the letter which represents your drive and click **OK**.



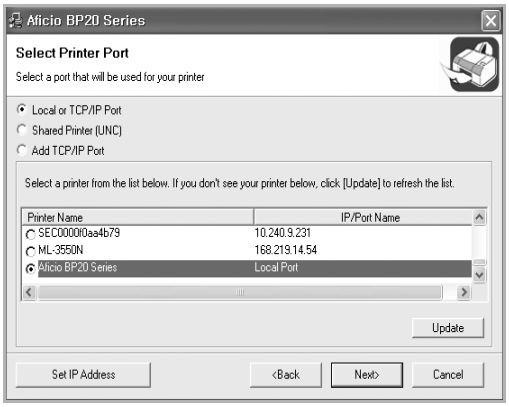
3 Click **Next**.

- If necessary, select a language from the drop-down list.
- **View User's Guide**: Allows you to view the User's Guide and System Administration Guide. If your computer doesn't have Adobe Acrobat, click on this option and it will automatically install Adobe Acrobat Reader for you.

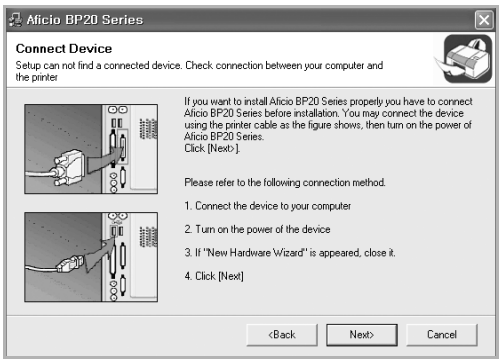
4 Select **Custom installation**. Click **Next**.



5 Select your printer and click **Next**.

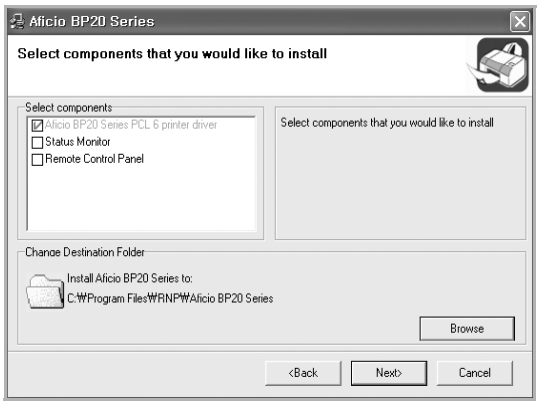


NOTES: If your printer is not already connected to the computer, the following window will appear.



- After connecting the printer, click **Next**.
- If you don't want to connect the printer at this time, click **Next**, and **No** on the following screen. Then the installation will start and a test page will not be printed at the end of the installation.

6 Select the components to be installed and click **Next**.



7 After the installation is finished, a window asking you to print a test page appears. If you choose to print a test page, select the checkbox and click **Next**.

Otherwise, just click **Next** and skip to step 9.

8 If the test page prints out correctly, click **Yes**.

If not, click **No** to reprint it.

9 Click **Finish**.



Installing Software for Network Printing

When you connect your printer to a network, you must first configure the TCP/IP settings for the printer. After you have assigned and verified the TCP/IP settings, you are ready to install the software on each computer on the network.

You can install the printer software using the typical or custom method.

Typical Installation

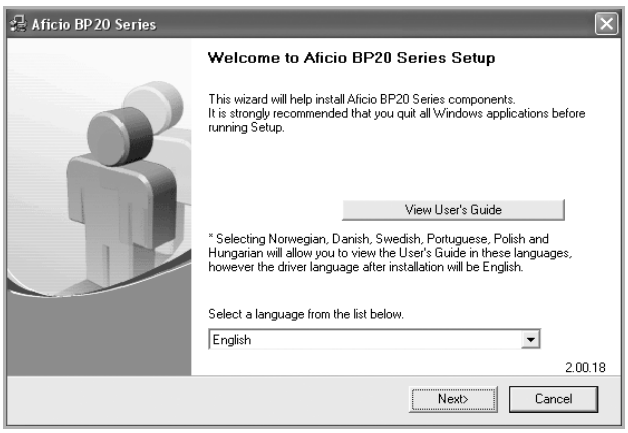
This is recommended for most users. All components necessary for printer operations will be installed.

1. Make sure that the printer is connected to your network and powered on. For details about connecting to the network, see the System Administration Guide.

2. Insert the supplied CD-ROM into your CD-ROM drive.

 The CD-ROM should automatically run, and an installation window appears.

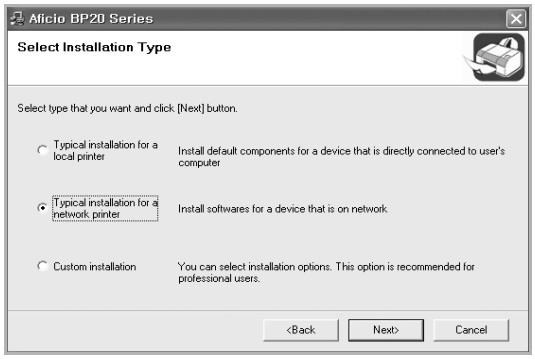
 If the installation window does not appear, click **Start** and then **Run**. Type **X:\Setup.exe**, replacing "**X**" with the letter which represents your drive and click **OK**.



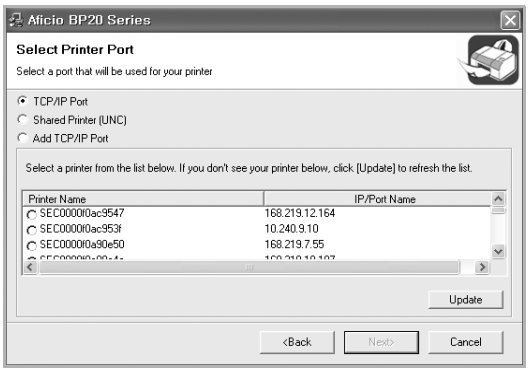
3. Click **Next**.

 - If necessary, select a language from the drop-down list.
 - **View User's Guide**: Allows you to view the User's Guide and System Administration Guide. If your computer doesn't have Adobe Acrobat, click on this option and it will automatically install Adobe Acrobat Reader for you.

4 Select **Typical installation for a network printer**. Click **Next**.

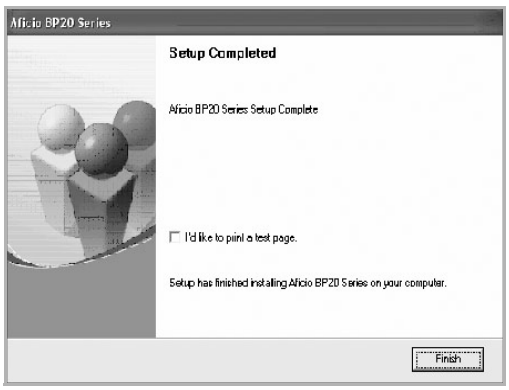


5 The list of printers available on the network appears. Select the printer you want to install from the list and then click **Next**.



- If you do not see your printer on the list, click **Update** to refresh the list, or select **Add TCP/IP Port** to add your printer to the network. To add the printer to the network, enter the port name and the IP address for the printer.
- To find a shared network printer (UNC Path), select **Shared Printer [UNC]** and enter the shared name manually or find a shared printer by clicking the **Browse** button.

6 After the installation is finished, a window appears asking you to print a test page. If you so desire, select the corresponding check box and Click **Finish**.



NOTE: After setup is complete, if your printer driver doesn't work properly, reinstall the printer driver. See "Reinstalling Printer Software" on page 2.29.

Custom Installation

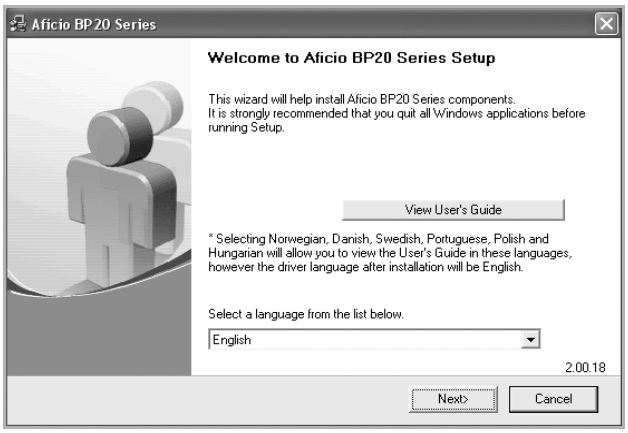
You can choose individual components to install and set a specific IP address.

1 Make sure that the printer is connected to your network and powered on. For details about connecting to the network, see page 2.13.

2 Insert the supplied CD-ROM into your CD-ROM drive.

The CD-ROM should automatically run, and an installation window appears.

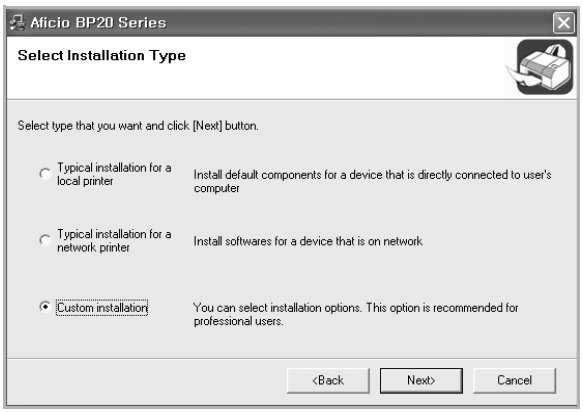
If the installation window does not appear, click **Start** and then **Run**. Type **X:\Setup.exe**, replacing "**X**" with the letter which represents your drive and click **OK**.



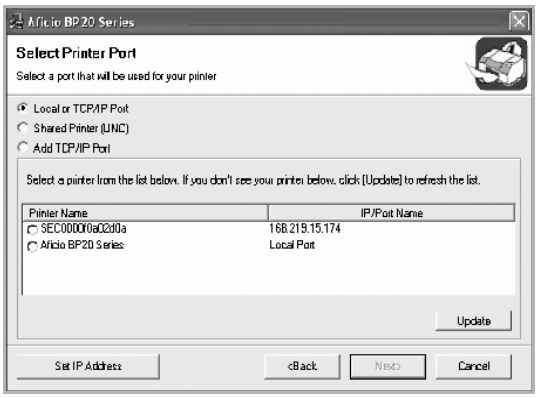
3 Click **Next**.

- If necessary, select a language from the drop-down list.
- **View User's Guide**: Allows you to view the User's Guide and System Administration Guide. If your computer doesn't have Adobe Acrobat, click on this option and it will automatically install Adobe Acrobat Reader for you.

4 Select **Custom installation**. Click **Next**.

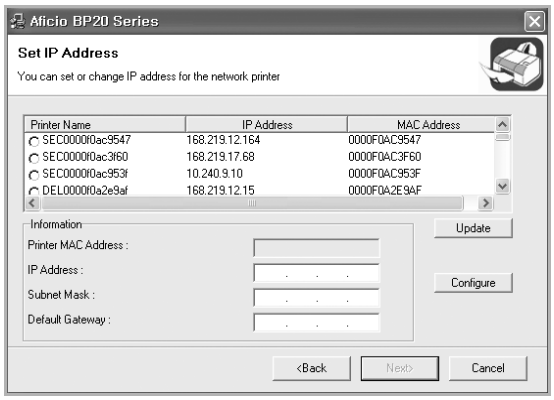


5 The list of printers available on the network appears. Select the printer you want to install from the list and then click **Next**.



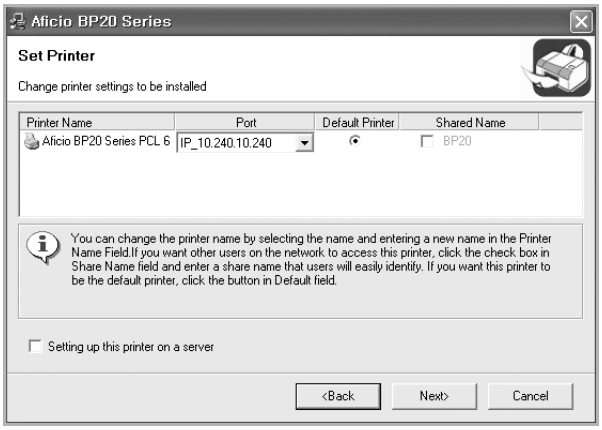
- If you do not see your printer on the list, click **Update** to refresh the list, or select **Add TCP/IP Port** to add your printer to the network. To add the printer to the network, enter the port name and the IP address for the printer.
- To find a shared network printer (UNC Path), select **Shared Printer [UNC]** and enter the shared name manually or find a shared printer by clicking the **Browse** button.

NOTES: If you want to set a specific IP address on a specific network printer, click the **Set IP Address** button. The Set IP Address window appears. Do as follows:



a. Select a printer to be set with a specific IP address from the list.
b. Configure an IP address, subnet mask, and Default gateway for the printer manually and click **Configure** to set the specific IP address for the network printer.
c. When your computer asks you to confirm your selection, click **Yes**.

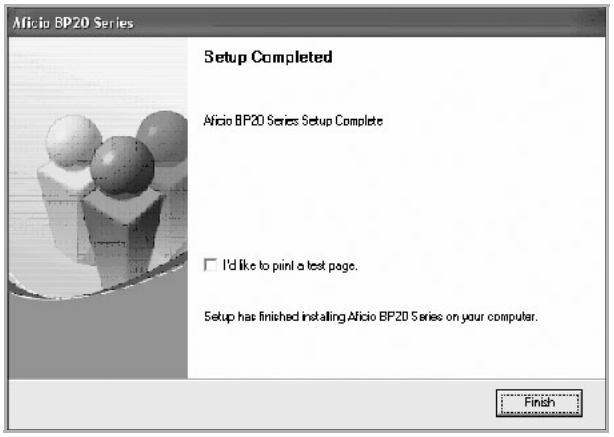
6 Select the components to be installed and click **Next**. After selecting the components, the following window appears. You can also change the printer name, set the printer to be shared on the network, set the printer as the default printer, and change the port name of each printer. Click **Next**.



To install this software on a server, select the **Setting up this printer on a server** checkbox.

7 After the installation is finished, a window appears asking you to print a test page.

Otherwise, just click **Finish**.



NOTE: After setup is complete, if your printer driver doesn't work properly, reinstall the printer driver. See "Reinstalling Printer Software" on page 2.29.

Reinstalling Printer Software

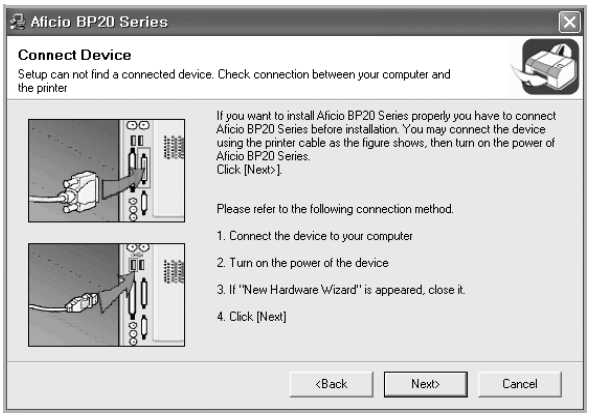
You can reinstall the software if installation fails.

1 Start Windows.

2 From the **Start** menu select **Programs** or **All Programs** → **BP20 Series** → **Maintenance**.

3 Select **Repair** and click **Next**.

NOTES: If your printer is not already connected to the computer, the following window will appear.



- After connecting the printer, click **Next**.
- If you don't want to connect the printer at this time, click **Next**, and **No** on the following screen. Then the installation will start and a test page will not be printed at the end of the installation.

4 Select the components you want to reinstall and click **Next**.

If you select **Printer**, the window asking you to print a test page appears. Do as follows:

a. To print a test page, select the check box and click **Next**.

b. If the test page prints out correctly, click **Yes**.

If it doesn't, click **No** to reprint it.

5 When the reinstallation is done, click **Finish**.

Removing Printer Software

1. Start Windows.
2. From the **Start** menu select **Programs** or **All Programs**→ **BP20 Series** → **Maintenance**.
3. Select **Remove** and then click **Next**.

 Then you will see a component list so that you can remove any of them individually.

 If you want to uninstall the printer driver, check **BP20 Series PCL6 printer driver**.

 If you want to uninstall Status Monitor, check **Status Monitor**.

 If you want to uninstall the Remote Control Panel, check **Remote Control Panel**.

 If you want to uninstall the Set IP, check **Set IP**.
4. Select the components you want to remove and then click **Next**.
5. When your computer asks you to confirm your selection, click **Yes**.

 The selected driver and all of its components are removed from your computer.
6. After the software is removed, click **Finish**.

Using the Set IP (BP20N only)

The Set IP can detect printers in the same network and display the network information. In addition, this application can configure the network information of the printer that has own network interface card.

Installing Set IP

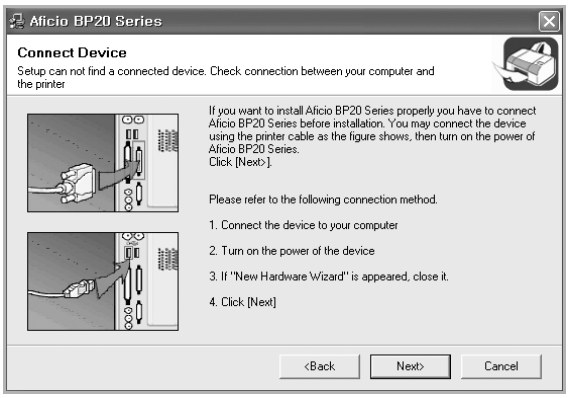
1. Insert the supplied CD-ROM into your CD-ROM drive. The CD-ROM should automatically run and a maintenance window appears.
 If the maintenance window does not appear, click **Start** and then Run. Type
 X:**\Setup.exe**, replacing "**X**" with the letter of your drive and click **OK**.

2. Click **Next**.

3. Select **Custom installation**. Click **Next**.

4. Select your printer and click **Next**.

NOTES: If your printer is not already connected to the computer, the following window will appear.



- After connecting the printer, click **Next**.
- If you don't want to connect the printer at this time, click **Next**, and **No** on the following screen. Then the installation will start and a test page will not be printed at the end of the installation.

5. Check **Set IP** and then click **Next**.

6. When the installation is completed, click **Finish**.

Reinstalling Set IP

1. Start Windows.
2. From the **Start** menu select **Programs** or **All Programs**→ **BP20 Series** → **Maintenance**.
3. Select **Repair** and then click **Next**.
4. Check **Set IP** and then click **Next**.
5. When reinstallation is completed, click **Finish**.

Removing Set IP

1. Start Windows.
2. From the **Start** menu select **Programs** or **All Programs**→ **BP20 Series** → **Maintenance**.
3. Select **Remove** and then click **Next**.
4. Check **Set IP** and then click **Next**.
5. When your computer asks you to confirm your selection, click **Yes**.
6. After the software is removed, click **Finish**.

To Use Set IP

1 From the **Start** menu, select **BP20 Series** in Programs, and click **Set IP**.

2 Click  to find printer on the local network, or click  and type the printer's MAC address.



NOTE: To confirm the MAC address, see the NETWORK PRINTER CARD TEST PAGE. The NETWORK PRINTER CARD TEST PAGE will be printed after the Configuration Page. To Print the Configuration Page, refer to "Printing Configuration Pages" on page 5.8.

3 Type IP address, Subnet Mask and Default Gateway, and then click **[Config]**.

4 If it is successfully completed, the printer prints NETWORK PRINTER CARD TEST PAGE.

MEMO

3 Using Print Materials

This chapter will help you understand types of paper you can use with your printer and how to properly load paper in the different paper trays for the best print quality.

This chapter includes:

- **Choosing Paper and Other Materials**
- **Selecting the Output Location**
- **Loading Paper**
- **Printing on Envelopes**
- **Printing on Labels**
- **Printing on Transparencies**
- **Printing on Card Stock or Custom-sized Materials**
- **Printing on Preprinted Paper**

Choosing Paper and Other Materials

You can print on a variety of print materials, such as plain paper, envelopes, labels, transparencies, and so on. See "Paper Specifications" on page C.3. To get the best possible print quality, use only high-quality copier-grade paper.

When you choose print materials, consider the following:

- **Desired outcome**: The paper you choose should be appropriate for the project.
- **Size**: You can use any size paper that fits easily within the paper adjusters of the paper tray.
- **Weight** : Your printer supports paper weight as follows:

 -16~24 lbs (60~90 g/m^2) bond for the Tray1 or optional Tray2

 -16~43 lbs (60~163 g/m^2) bond for the Multi-Purpose Tray
- **Brightness**: Some papers are whiter than others and produce sharper, more vibrant images.
- **Surface smoothness**: The smoothness of the paper affects how crisp the printing looks on the paper.



NOTE: Using a material that does not conform to the specifications listed in the paper specification can cause problems that may require service. This service is not covered by the warranty or service agreements.

Sizes and Capacities

Size	Input Source/Capacity*a	
	Tray1 or optional Tray2	Multi-Purpose Tray
Plain Paper		
Letter (216 x 279 mm)	250	50
Legal (216 x 356 mm)	250	50
Executive (184 x 267 mm)	250	50
Oficio (216 x 343 mm)	250	50
Folio (216 x 330 mm)	250	50
A4 (210 x 297 mm)	250	50
JIS B5 (182 x 257 mm)	250	50
ISO B5 (176 x 250 mm)	250	50
A5 (148 x 210 mm)	250	50
A6 (105 x 148 mm)	-	50
Envelopes		
No.10 (105 x 241 mm)	-	5
Monarch (98 x 191 mm)	-	5
C5 (162 x 229 mm)	-	5
DL (110 x 220 mm)	-	5
C6 (114 x 162 mm)	-	5
Labels*b		
Letter (216 x 279 mm)	-	5
A4 (210 x 297 mm)	-	5
Transparencies*b		
Letter (216 x 279 mm)	-	5
A4 (210 x 297 mm)	-	5
Card stocks*b	-	5
Bond*b	-	5

**a Depending on paper thickness, the maximum capacity may be reduced.*
**b If you are experiencing excessive jamming, feed one sheet at a time through the Multi-Purpose Tray.*

Guidelines for Paper and Special Materials

When selecting or loading paper, envelopes, or other special materials, keep these guidelines in mind:

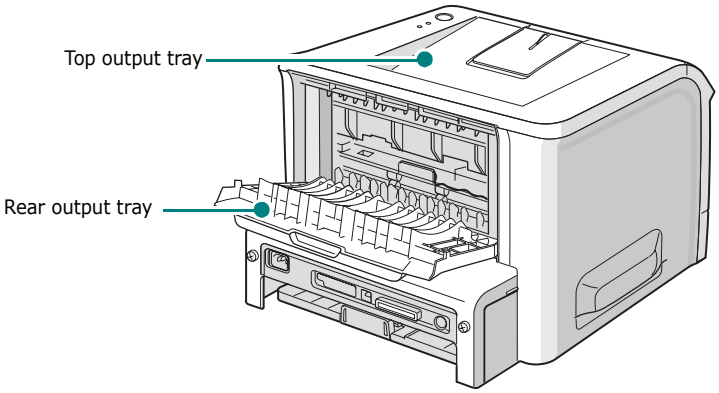
- Attempting to print on damp, curled, wrinkled, or torn paper can cause paper jams and poor print quality.
- Use cut-sheet paper only. You cannot use multi-part paper.
- Use only high-quality, copier grade paper for the best print quality.
- Do not use paper that has already been printed on or that has been fed through a photocopier.
- Do not use paper with irregularities, such as tabs or staples.
- Do not attempt to load any tray during printing and never overfill the tray. This could cause a paper jam.
- Avoid paper with embossed lettering, perforations, or texture that is too smooth or too rough.
- Coloured paper should be of the same high quality as white photocopy paper. The pigments must withstand the printer's fusing temperature of 400°F (205°C) for 0.1 second without deterioration. Do not use paper with a coloured coating that was added after the paper was produced.
- Preprinted forms must be printed with nonflammable, heat-resistant inks that do not melt, vaporize, or release hazardous emissions when subject to the printer's approximately 400°F (205°C) fusing temperature for 0.1 second.
- Store paper in its ream wrapper until ready to use. Place cartons on pallets or shelves, not on the floor.
- Do not place heavy objects on top of the paper, whether it is packaged or unpackaged.
- Keep paper away from moisture, direct sunlight, or other conditions that can cause it to wrinkle or curl.



NOTE: Do not use carbonless paper or tracing paper. They are unstable at the fusing temperature and can give off fumes, or cause damage to the paper.

Selecting the Output Location

The printer has two output locations; the rear output tray and the top output tray.



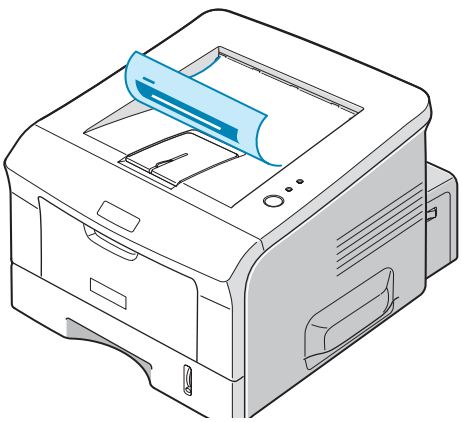
To use the top output tray, be sure that the rear output tray is closed. To use the rear output tray, open it.

NOTES:

- If paper coming out of the top output tray has problems, such as excessive curl, try printing to the rear output tray.
- To avoid paper jams, do not open or close the rear output tray while the printer is printing.

Printing to the Top Output Tray *(Face down)*

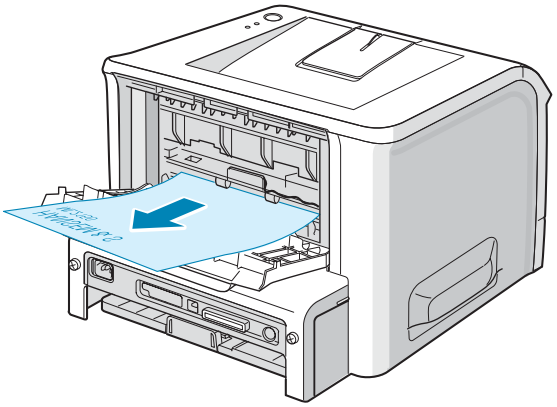
The top output tray collects paper face-down, in the order in which it was printed. The top output tray should be used for most print jobs.



CAUTION: If you continuously print many pages, the surface of the output tray may become hot. Be careful not to touch the surface, and especially keep children away from the surface.

Printing to the Rear Output Tray *(Face up)*

The printer always prints to the rear output tray if it is open. Paper comes out of the printer face-up, and each time a sheet of paper comes out, it falls down from the printer.

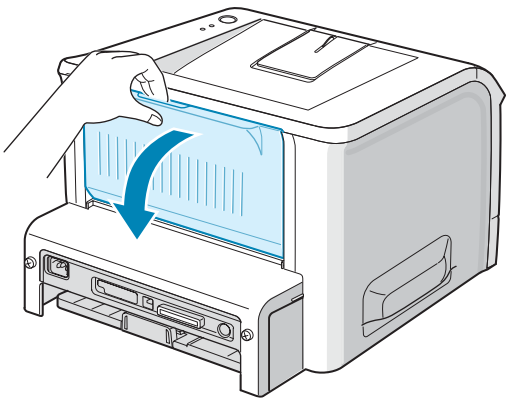


Printing from the Multi-Purpose Tray to the rear output tray provides a **straight paper path**. Opening the rear output tray might improve the output quality with the following:

- envelopes
- labels
- transparencies

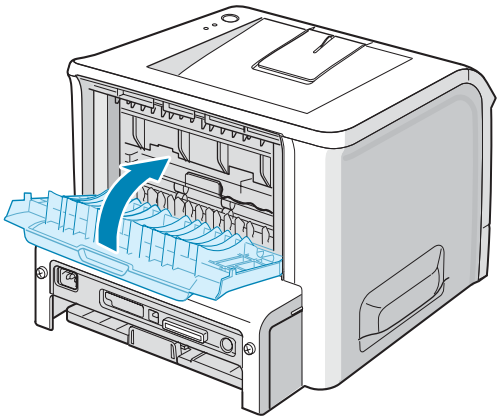
To open the rear output tray:

1. Open the rear door by pulling it down. The cover functions as the output tray.



CAUTION: The fusing area at the rear portion of the inside of your printer is hot when powered. Be careful not to be burned when accessing this area.

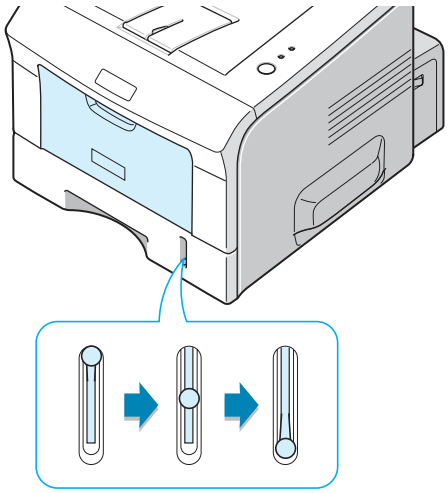
2 If you do not want to use the rear output tray, close the tray. The pages will stack on the top output tray.



Loading Paper

Proper paper loading helps prevent paper jams and ensure trouble-free printing. Do not remove the paper tray while a job is printing. Doing so may cause a paper jam. See "Sizes and Capacities" on page 3.3 for acceptable paper size and capacities for each tray.

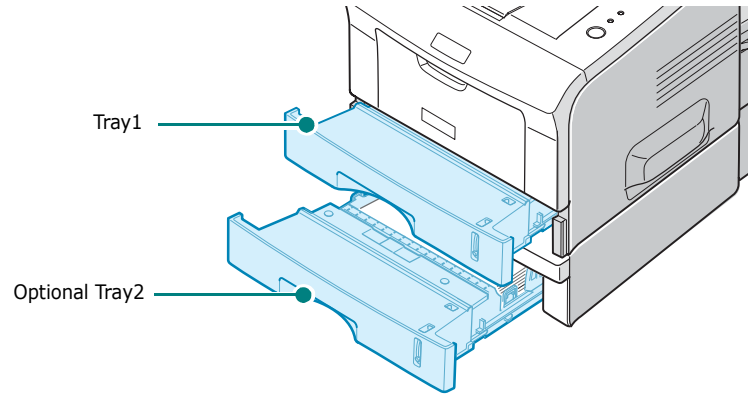
The paper level bar on the front of the paper tray(s) shows the amount of paper currently left in the tray. When the tray is empty, the indicator drops to the bottom.



Paper full ▲ ▲ Paper empty

Using Tray1 or the Optional Tray2

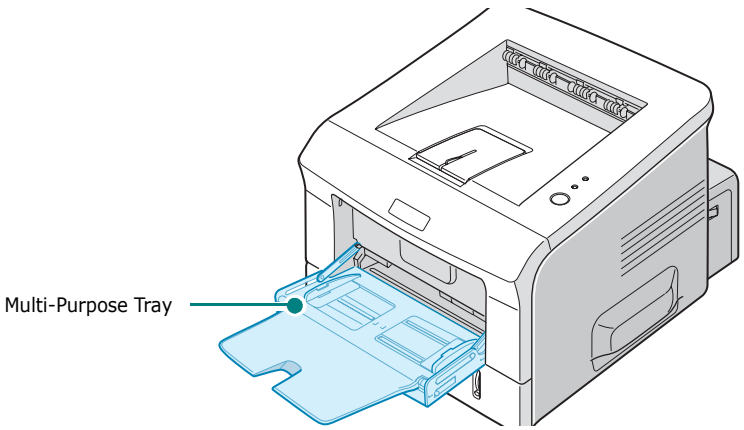
Tray1 and the optional Tray2 can hold up to 250 sheets of paper. See "Sizes and Capacities" on page 3.3 for acceptable paper size and capacities of each tray.



Load a stack of paper into the tray and print. For details about loading paper in Tray1 or the optional Tray2, see "Loading Paper" on page 2.7.

Using the Multi-Purpose Tray

The multi-Purpose Tray is located in the front of your printer. It can be closed when you are not using it, making the printer more compact.

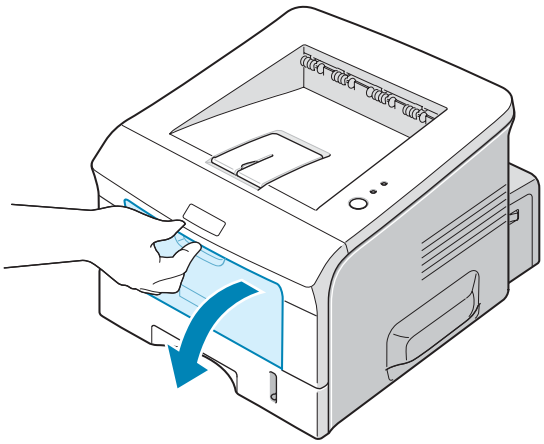


The Multi-Purpose Tray can hold several sizes and types of paper, such as transparencies, cards, and envelopes. You may also want to use the Multi-Purpose Tray for single page print jobs on letterhead, coloured paper for use as separator sheets, or other special materials that you do not normally keep in the paper tray. You can load approximately 50 sheets of plain paper, 5 envelopes, 5 transparencies, 5 sheets of card stock or 5 labels at a time.

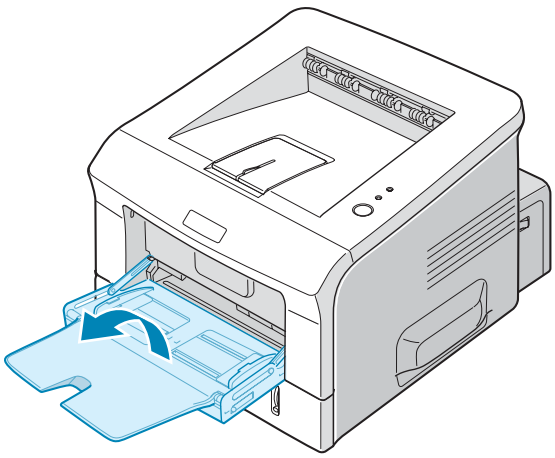
- Load only one size of print material at a time in the Multi-Purpose Tray.
- To prevent paper jams, do not add paper when there is still paper in the Multi-Purpose Tray. This also applies to other types of print materials.
- Print materials should be loaded face up with the top edge going into the Multi-Purpose Tray first and be placed on the centre of the tray.
- Do not place objects on the Multi-Purpose Tray. Also avoid pressing down or applying excessive force on it. The tray may fall from the printer.

To load paper in the Multi-Purpose Tray:

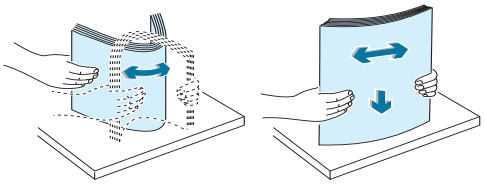
1 Pull the Multi-Purpose Tray down towards you.



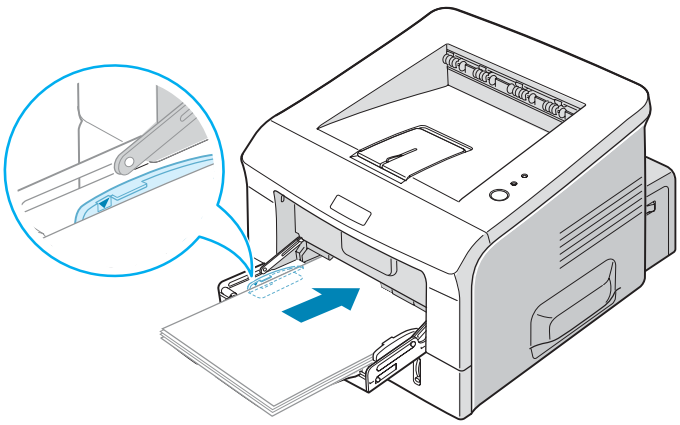
2 Unfold the extender to extend the tray to its full-length to hold longer paper.



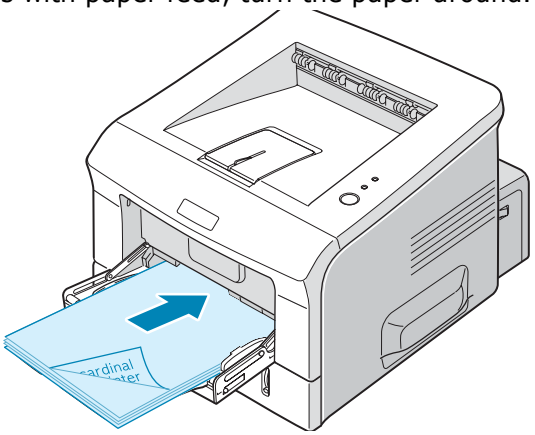
3 Prepare a stack of paper for loading by flexing or fanning the paper back and forth. Straighten the edges on a level surface.



4 Place paper on the centre of the tray **with the print side face up**. Pay attention to the paper limit mark on the left inside wall of the tray. Paper overloading may cause paper jams.

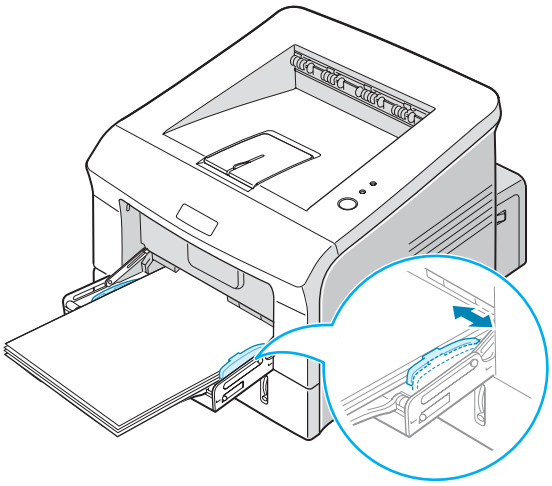


If you want to print on previously printed paper from the Multi-Purpose Tray, the printed side should be facing down with an uncurled edge to the printer. If you experience problems with paper feed, turn the paper around.



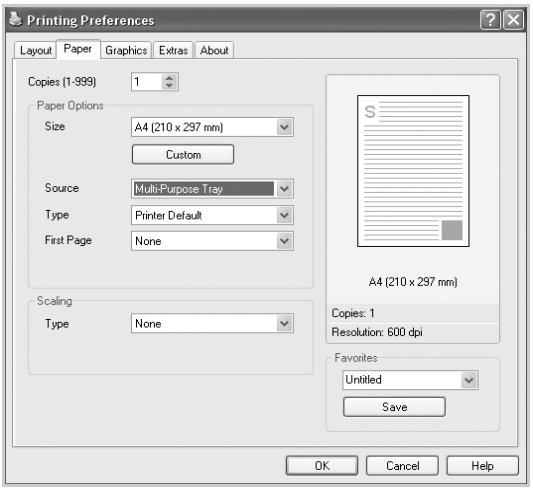
NOTE: Make sure that you have not loaded too much print material. The print material buckles if you load a stack that is too deep or push it in too far.

5 Slide the paper width guide and adjust it against the stack of print material without bending.



NOTE: Your printer cannot automatically detect the size of paper loaded in the Multi-Purpose Tray. Loading the Multi-Purpose Tray with the correct paper size allows you to select paper by size rather than paper source when you print from your software application. You do not have to check which paper is loaded in the Multi-purpose Tray before printing.

6 When you print a document, select the paper source and type in the software application.



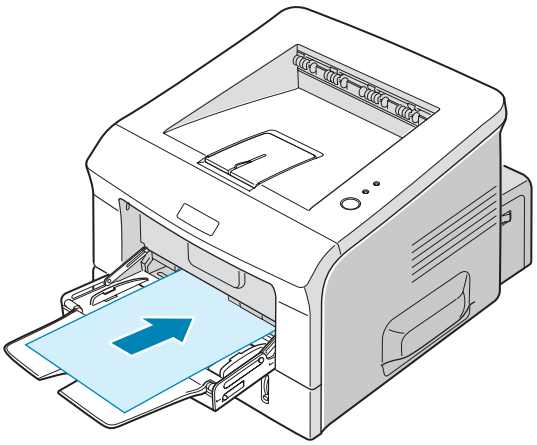
7 After printing, push the extender back to its place and close the Multi-Purpose Tray.

Using the Manual Feed Mode

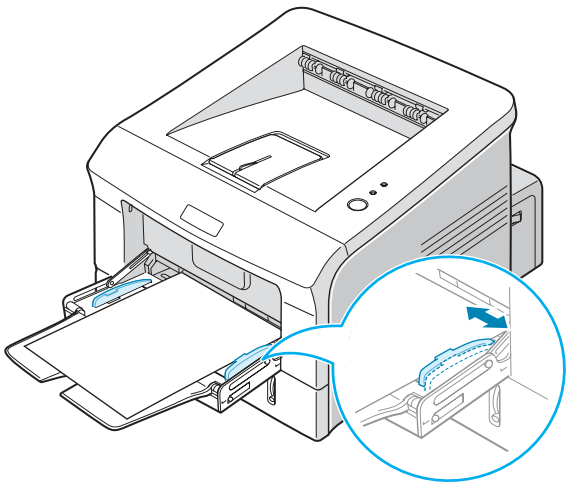
If you select **Manual Feed** in the **Source** option when changing print settings, you can manually load a sheet of print material in the Multi-Purpose Tray. Manually loading paper can be helpful when you want to check the print quality after each page is printed.

This loading procedure is almost the same as the procedure for loading in the Multi-Purpose Tray, except you load paper sheet-by-sheet in the Tray, send print data to print the first page, and press the **Cancel** button on the control panel to print each following page.

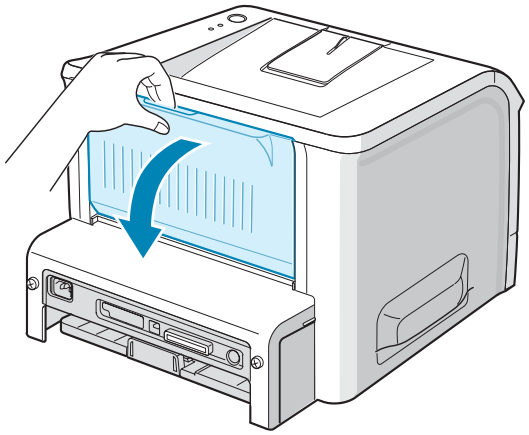
1. Load a sheet of print material on the centre of the Multi-Purpose Tray **with the print side up**.



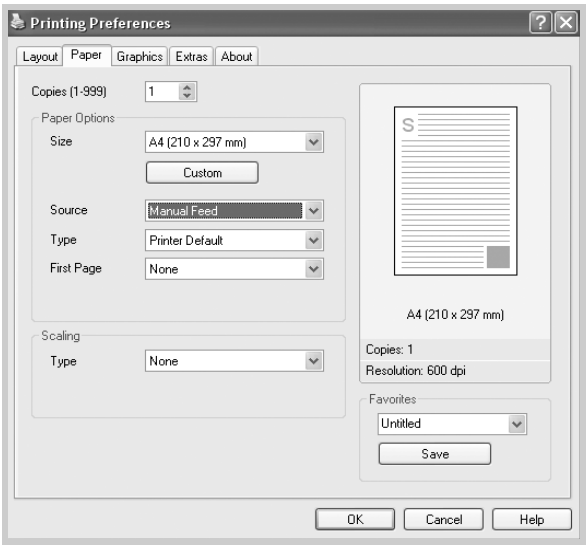
2. Slide the paper width guide and adjust it against the material without bending.



3 Open the rear output tray.



4 When you print a document, you must select **Manual Feed** for **Source** from the software application, and then select the correct paper size and type.



5 Press the **Cancel** button on the printer to start feeding.

6 Printing is started.

7 If you are printing multiple pages, load the next sheet after the first page prints out, and press the **Cancel** button.

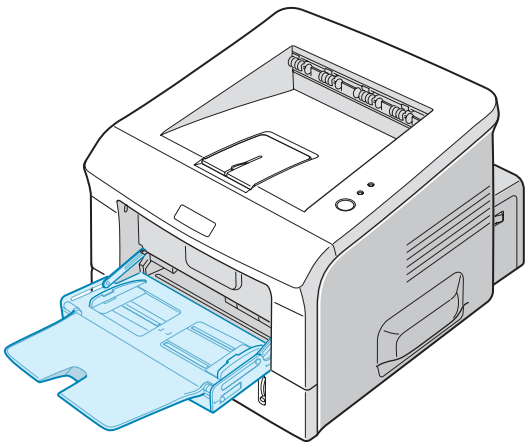
Repeat this step for every page to be printed.

Printing on Envelopes

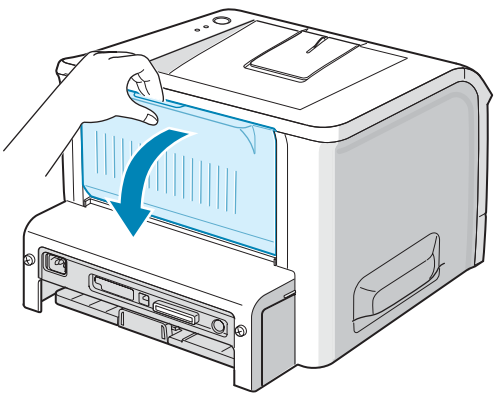
Guidelines

- Only use envelopes recommended for laser printers. Before loading envelopes into the Multi-Purpose Tray, make sure that they are undamaged and are not stuck together.
- Do not feed stamped envelopes.
- Never use envelopes with clasps, snaps, windows, coated lining, or self-stick adhesives. These envelopes may severely damage the printer.

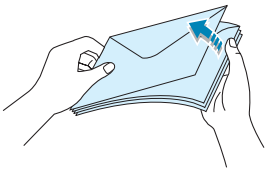
1 Open the Multi-Purpose Tray and unfold the extender to its full-length position.



2 Open the rear output tray.

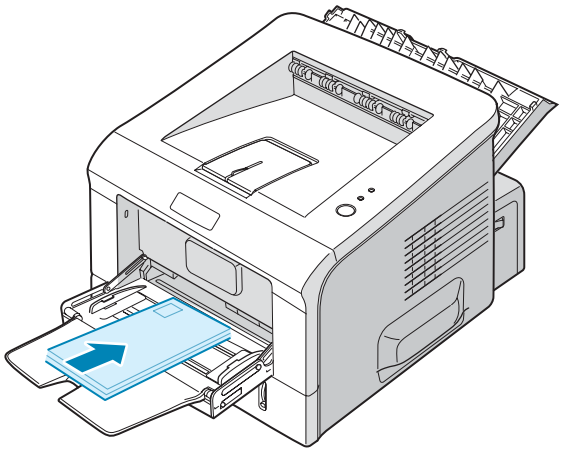


3 Flex or fan the edge of the envelope stack to separate the pages before loading.

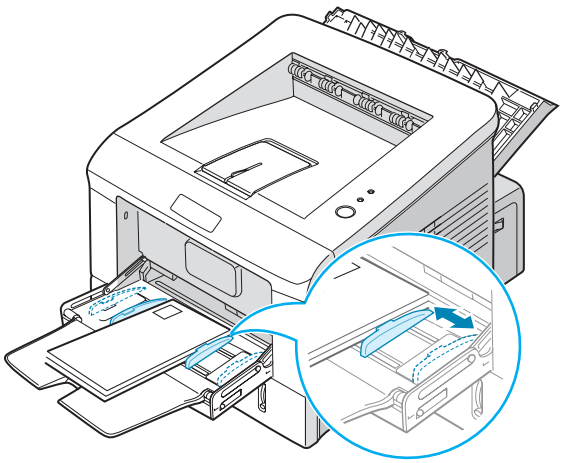


4 Load the envelopes onto the Multi-Purpose Tray **with the flap side down**.

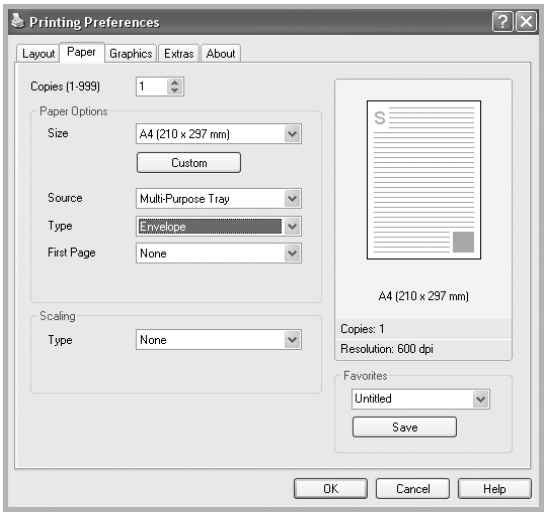
The stamp area is **on the left side** and the end of the envelope **with the stamp area enters the tray first**.



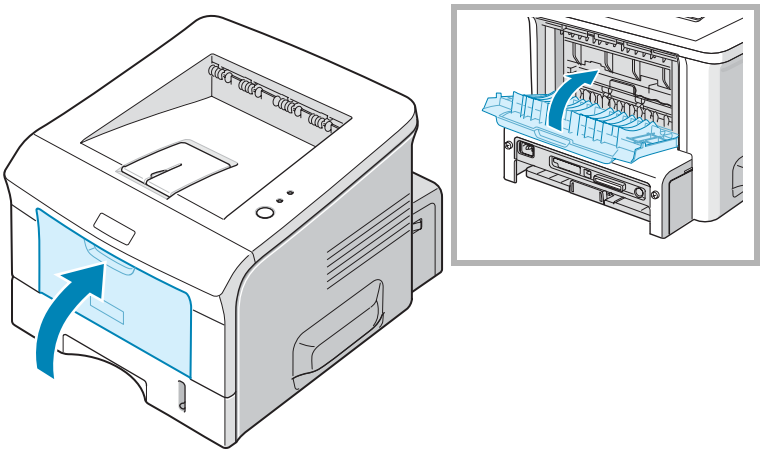
5 Adjust the guide to the edge of the envelope stack.



6 When you print on envelopes, select the appropriate paper source, type, and size in the software application. For details, see page 4.6.



7 After printing, close the Multi-Purpose Tray and the rear output tray.

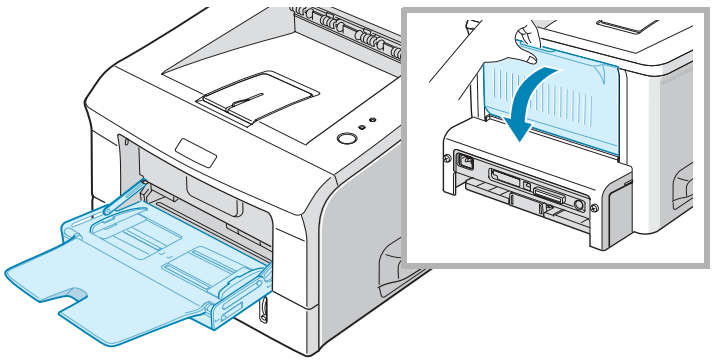


Printing on Labels

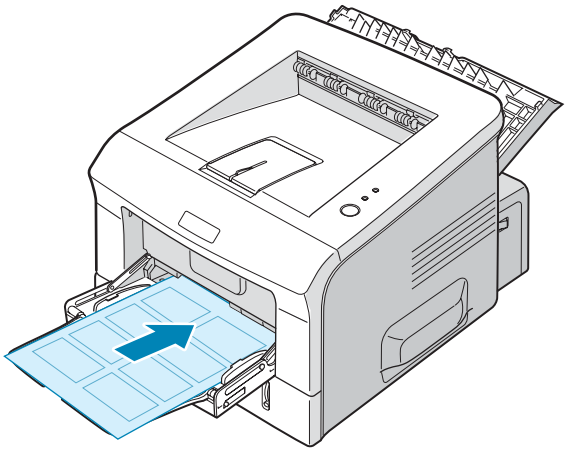
Guidelines

- Only use labels recommended for laser printers.
- Verify that the labels' adhesive material can tolerate fusing temperature of 205°C (400°F) for 0.1 second.
- Make sure that there is no exposed adhesive material between the labels. Exposed areas can cause labels to peel off during printing, which can cause paper jams. Exposed adhesive can also cause damage to printer components.
- Do not feed a sheet of labels through the printer more than once. The adhesive backing is designed for one pass through the printer.
- Do not use labels that are separating from the backing sheet or are wrinkled, bubbled, or otherwise damaged.

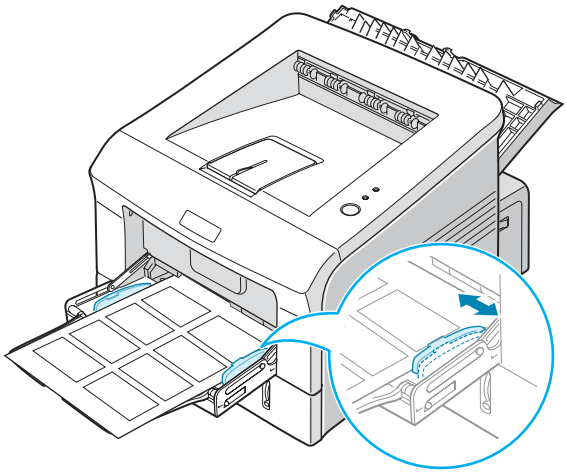
1 Open the Multi-Purpose Tray and the rear output tray.



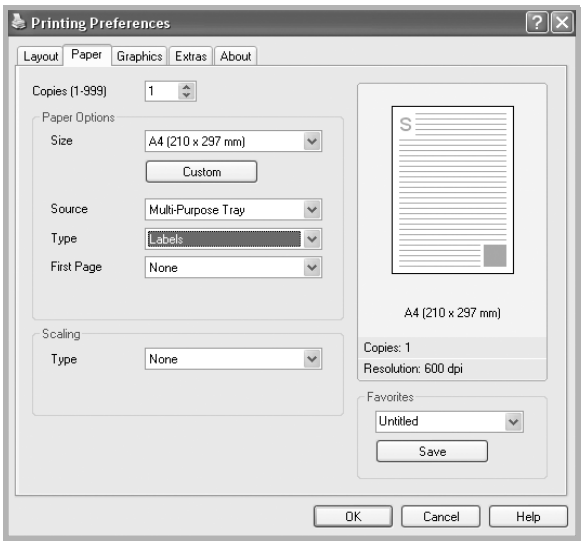
2 Load labels **with the print side up**.



3 Adjust the guide to fit the width of the sheet of labels.



4 When you print on labels, select the appropriate paper source, type, and size in the software application. For details, see page 4.6.



5 After printing, close the Multi-Purpose Tray and the rear output tray.

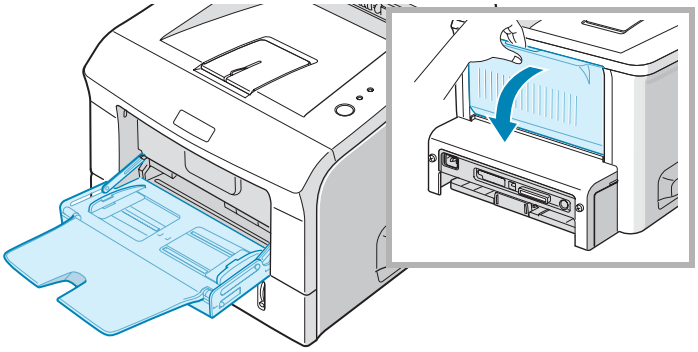
NOTE: To prevent labels from sticking, do not let the printed label sheets stack up as they are printed out.

Printing on Transparencies

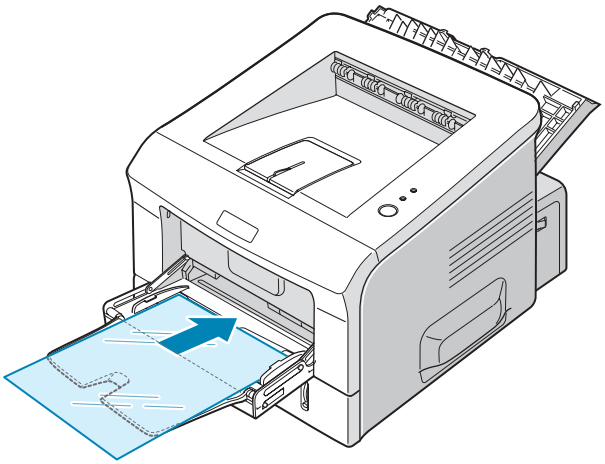
Guidelines

- Only use transparencies recommended for use in laser printers.
- Ensure that transparencies are not wrinkled, curled, or have any torn edges.
- Hold the transparencies by the edges and avoid touching the print side. Oils deposited on the transparency can cause print quality problems.
- Be careful not to scratch or leave fingerprints on the print side.

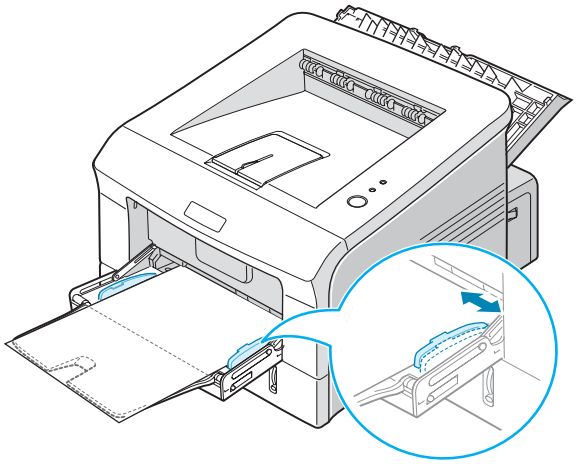
1 Open the Multi-Purpose Tray and the rear output tray.



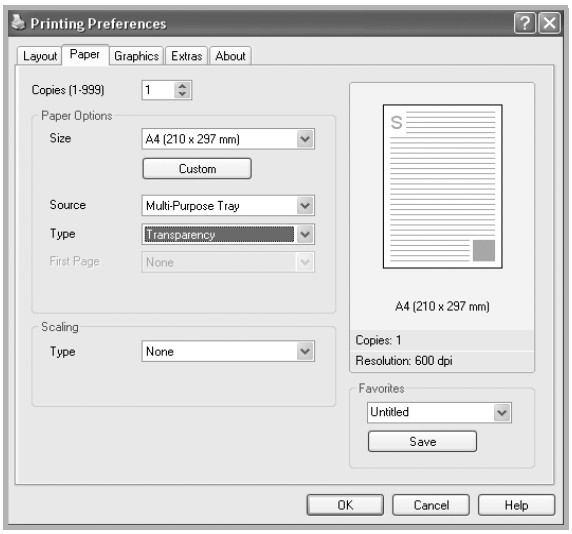
2 Load transparencies **with the print side up**, and **the top with the adhesive strip entering the printer first**.



3 Adjust the guide to fit the width of the transparencies.



4 When you print on transparencies, select the appropriate paper source, type, and size in the software application. For details, see page 4.6.



5 After printing, close the Multi-Purpose Tray and the rear output tray.

NOTES:

- If you print on thin transparencies to the rear output tray, they can curl. In this case, use the top output tray. If the problem persists, check if your transparencies meet the printer's specifications.
- To prevent transparencies from sticking, do not let the printed sheets stack up as they are printed out.
- Place transparencies on a flat surface after removing them from the printer.

Printing on Card Stock or Custom-sized Materials

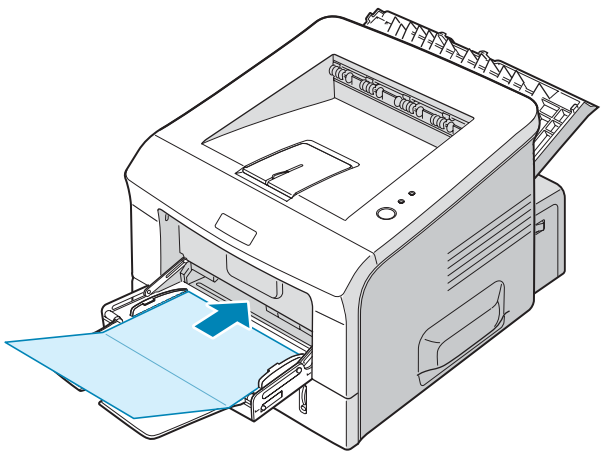
Postcards, 3.5 by 5.83 in. (index) cards and other custom-sized materials can be printed with your printer. The minimum size is 76 by 127 mm (3 by 5 in.) and the maximum size is 216 by 356 mm (8.5 by 14 in.).

Guidelines

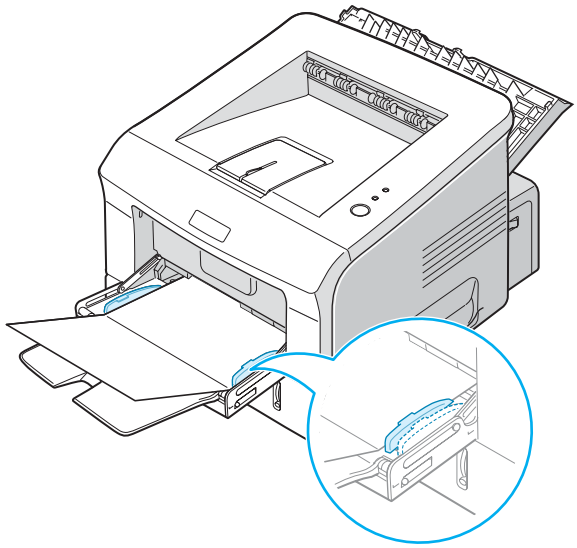
- Always insert the short-edge into the Multi-Purpose Tray first. If you want to print in landscape mode, make this selection through your software. Inserting paper long-edge first may cause a paper jam.
- Do not load more than 5 cards into the Multi-Purpose Tray at a time.
- Do not print on media smaller than 76 mm (3 in.) wide or 127 mm(5 in.) long.
- Set margins at least 6.4 mm (0.25 in.) away from the edges of the material in the software application

1 Open the Multi-Purpose Tray and the rear output tray.

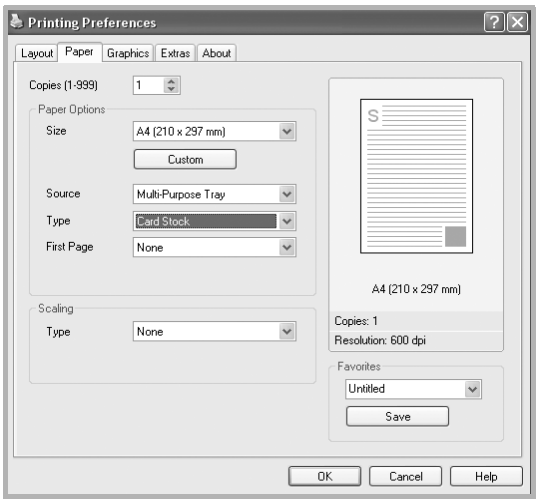
2 Load print material with print side up and short edge first.



3 Adjust the guide to fit the width of the material stack.



4 When you print, select the appropriate paper source, type, and size in the software application. For details, see page 4.6.



NOTES:

- If the size of your print material is not listed in the **Size** box in the **Paper** tab of the printer driver properties, click the **Custom** button and set the size manually. See page 4.6.
- When you use 76 by 127 mm (3 by 5 in.) paper and it is too thin, a paper jam may occur. Use card stock heavier than 105g/m^2

5 After printing, close the Multi-Purpose Tray and the rear output tray.

Printing on Preprinted Paper

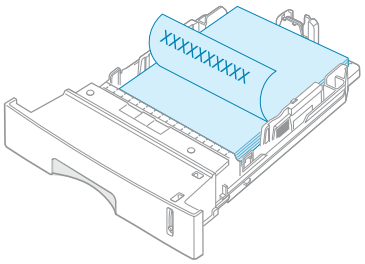
Preprinted paper is paper that has some type of printing placed on it before it is sent through the printer (paper that has a preprinted logo at the top of the page, for example).

Guidelines

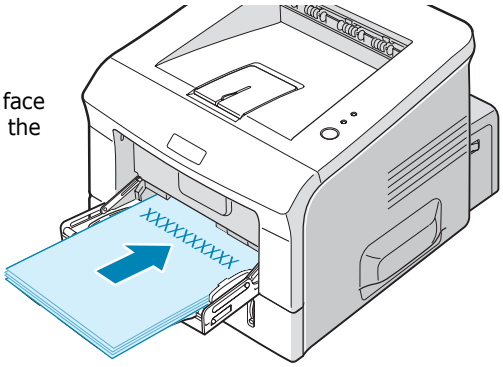
- Letterheads must be printed with heat-resistant ink that will not melt, vaporize, or release hazardous emissions when subjected to the printer's fusing temperature of 400 °F (205 °C) for 0.1 second.
- Ink on letterheads must be non-flammable and should not adversely affect any printer rollers.
- Forms and letterhead should be sealed in a moisture-proof wrapping to prevent changes during storage.
- Before you load preprinted paper as forms and letterhead, verify that the ink on the paper is dry. During the fusing process, wet ink can come off preprinted paper.

1 Load letterhead into the tray you want to use, as shown in the figures below. Adjust the guides to fit the width of the paper stack.

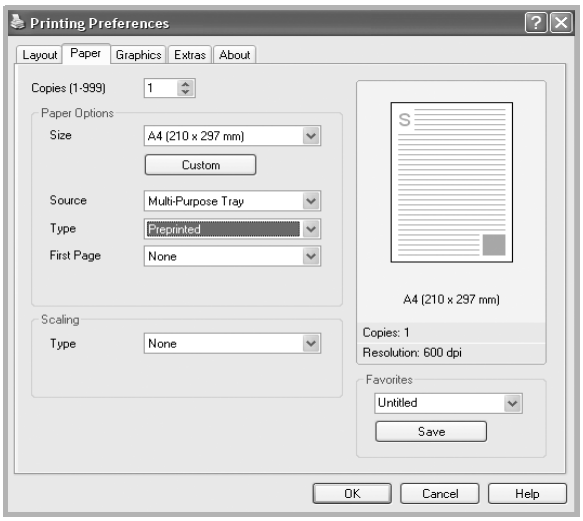
Load with the design face down, bottom edge towards the printer.



Load with the design face up, top edge towards the printer.



2 When you print, select the appropriate paper source, type, and size in the software application. For details, see page 4.6.



4 PRINTING TASKS

This chapter explains how to print your documents in Windows and how to use the print settings.

This chapter includes:

- **Printing a Document in Windows**
- **Printer Settings**
- **Using the Toner Save Mode**
- **Printing Multiple Pages on One Sheet of Paper**
- **Printing Posters**
- **Fitting Your Document to a Selected Paper Size**
- **Printing a Reduced or Enlarged Document**
- **Using Watermarks**
- **Using Overlays**
- **Using the Status Monitor**
- **Setting Up a Locally Shared Printer**

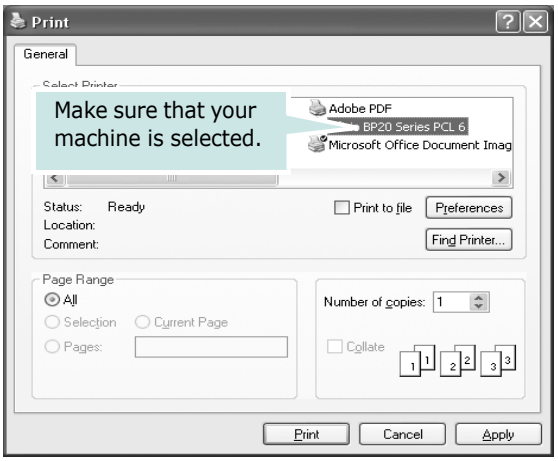
Printing a Document in Windows

The following procedure describes the general steps required for printing from various Windows applications. The exact steps for printing a document may vary depending on the application program you are using. Refer to the User's Guide of your software application for the exact printing procedure.

1 Open the document you want to print.

2 Select **Print** from the **File** menu. The Print window opens. It may look slightly different depending on your application.

You can select the basic print settings within the Print window. These settings include the number of copies and the print range.



▲ Windows XP

3 To take advantage of the printer features provided by your machine, click **Properties** or **Preferences** in the application's Print window. Go to step 4.

If you see a **Setup**, **Printer**, or **Options** button in your Print window, click it instead. Then click **Properties** on the next screen.

4 Click **OK** to close the printer properties window.

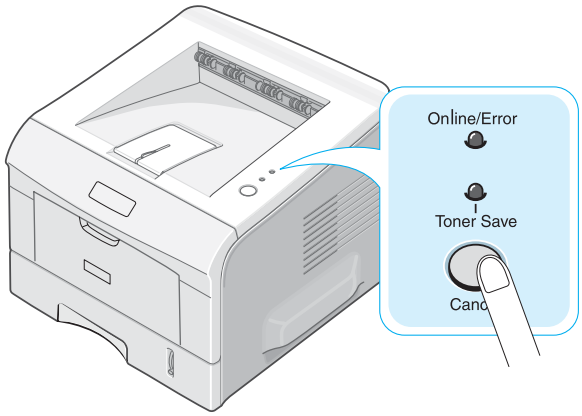
5 To start the print job, click **OK** or **Print** in the Print window.

Cancelling a Print Job

There are two ways to cancel a print job.

To stop a print job from the control panel:

Press the **Cancel** button on the control panel.



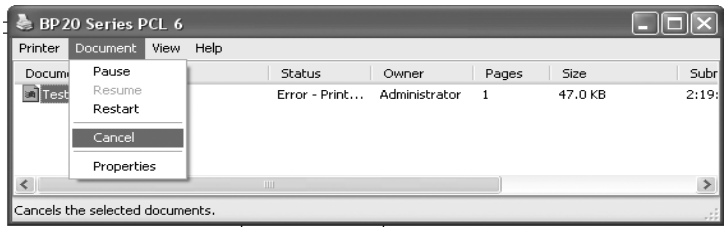
The printer will finish printing the page that is moving through the printer and delete the rest of the print job. Pressing the button cancels only the current job in the printer. If more than one print job is in the printer memory, the button must be pressed once for each job.

To stop a print job from the Printers folder:

1. From the Windows **Start** menu, select **Settings**.

2. Select **Printers** to open the Printers window, and double-click the **BP20 Series PCL6** icon.

3. From the **Document** menu, select **Cancel Printing** (Windows 9x/Me) or **Cancel** (Windows NT 4.0/2000/XP).



▲ XP

Printer Settings

You can use the BP20 Series PCL6 printer properties window, which allows you to access all of the printer options you need when using your machine. When the printer properties are displayed, you can review and change whatever settings are needed for your print job.

The printer's properties window may differ, depending on your operating system. This User's Guide shows the Printing Preferences window for Windows XP.

Your printer's Printing Preferences window consists of 5 tabs: **Layout**, **Paper**, **Graphics**, **Extras**, and **About**.

If you access printer properties through the **Printers** folder, you can view additional Windows-based tabs (refer to your Windows User's Guide) and the **Printer** tab (see page 4.13).



NOTES:

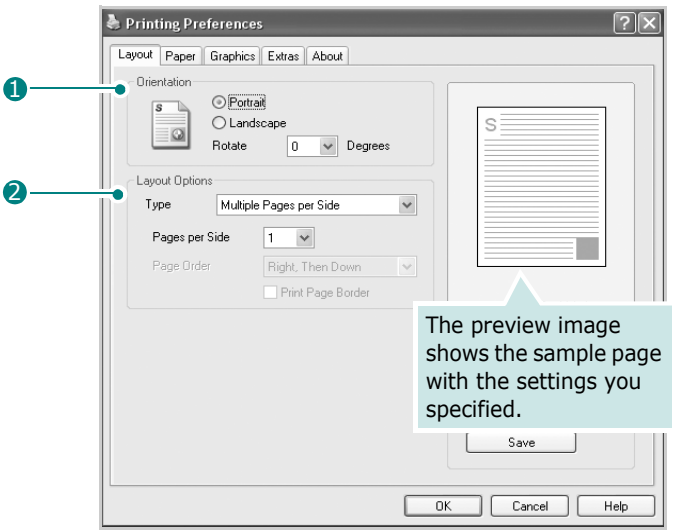
- Most Windows applications will override the settings you specify in the printer driver. Change all of the print settings available in the software application first, and change any remaining settings using the printer driver.
- The settings you change remain in effect only while you are using the current program. To make your changes permanent, make them in the **Printers** folder. Follow this procedure:

 4. Click the Windows **Start** menu.
 5. For Windows 95/98/Me/NT 4.0/2000, select **Settings** and then **Printers**.

 For Windows XP, select **Printers and Faxes**.
 6. Select the **BP20 Series PCL6** machine icon.
 7. Click the right mouse button on the printer icon and:
 - In Windows 95/98/Me, select **Properties**.
 - In Windows 2000/XP, select **Printing Preferences**.
 - In Windows NT 4.0, select **Document Default**.
 8. Change the settings on each tab, and click **OK**.

Layout tab

The **Layout** tab provides options to adjust how the document appears on the printed page. The **Layout Options** includes **Multiple Pages per Side** and **Poster**. See page 4.2 for more information on accessing printer properties.

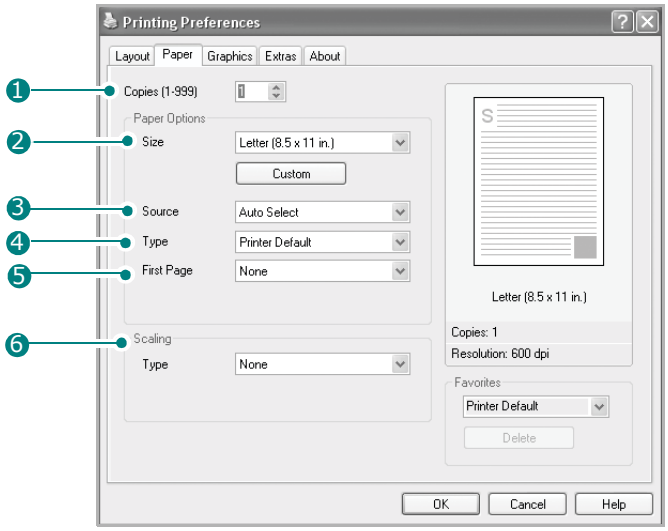


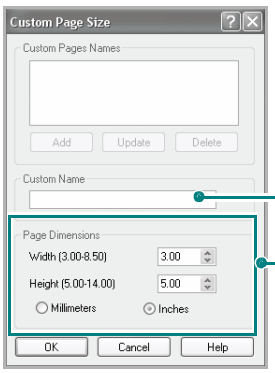
Property	Description
❶ **Orientation**	**Orientation** allows you to select the direction in which information is printed on a page. • **Portrait** prints across the width of the page, letter style. • **Landscape** prints across the length of the page, spreadsheet style. If you want to turn the page upside down, select **Rotate 180 Degrees**.  ▲ Portrait  ▲ Landscape
❷ **Layout Options**	**Layout Options** allows you to select advanced printing options. For details, see page 4.15~4.16.

Paper Tab

Use the following options for paper handling. See page 4.2 for more information about accessing printer properties.

Click the **Paper** tab to access many paper properties.



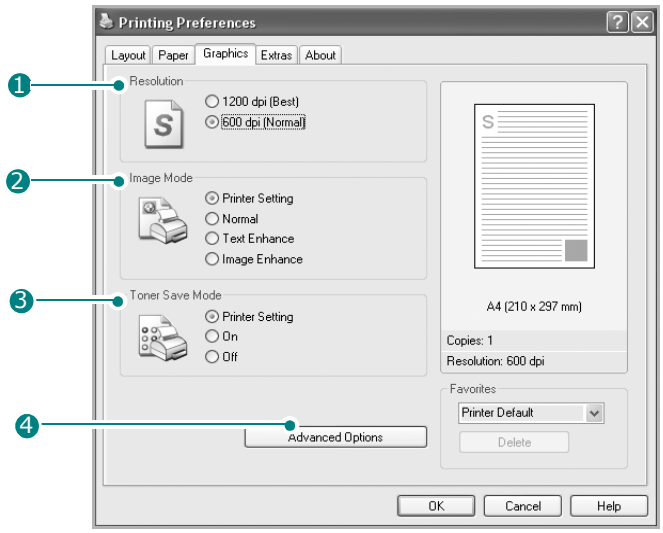
Property	Description
❶ **Copies**	**Copies** allows you to choose the number of copies to be printed. You can enter up to 999.
❷ **Size**	**Size** allows you to choose the size of the paper loaded in the tray. If the required size is not listed in the Size box, click **Custom**. When the Custom Page Size window appears, set the size and click **OK**. The setting appears on the list so that you can select it. 

Property	Description
❸ **Source**	Make sure that **Source** is set to the appropriate paper tray. Use the **Manual Feed** source when printing to special material. You need to load one sheet at a time into the Multipurpose tray. See page 3.12. If you install an optional Tray 2 and set the Tray 2 in printer properties (see page B.7), you can select **Tray2**. If the paper source is set to **Auto Select**, the machine automatically picks up print material in the following order: the Multipurpose tray, Tray 1, and optional Tray 2.
❹ **Type**	Make sure that **Type** is set to **Printer Default**. If you load a different type of print material, select the corresponding paper type. For more information about print materials, see Chapter 3, Using Print Materials. If you use cotton paper, set the paper type to **Thick** for the best printing. To use recycled paper, which weighs from 75g/m^2 to 90g/m^2 (20lb to 24lb), or colored paper, select **Color Paper**.
❺ **First Page**	This property allows you to print the first page using a different paper type from the rest of the document. You can select the paper source for the first page. For example, load thick stock for the first page into the Multipurpose tray, and plain paper into Tray1. Then, select **Tray1** in the **Source** option and **Multi-Purpose Tray** in the **First Page** option.
❻ **Scaling**	**Scaling** allows you to automatically or manually scale your print job on a page. You can choose from **None**, **Fit to Page**, and **Reduce/Enlarge**. For details, see page 4.19~4.20.

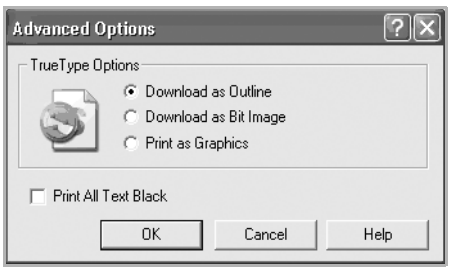
Graphics Tab

Use the following options to adjust the print quality for your specific printing needs. See page 4.2 for more information about accessing printer properties.

Click the **Graphics** tab to display the properties shown below.



Property	Description
❶ **Resolution**	You can select the printing resolution by choosing from **1200 dpi [Best]**, **600 dpi [Normal]**. The higher the setting, the sharper the printed characters and graphics. Higher settings may increase the time it takes to print a document.
❷ **Image Mode**	Some printed characters or images appear to have jagged or uneven edges. Set this **Image Mode** option to improve the print quality of your text and image, and make the characters and images appear smoother. • **Printer Setting**: When you select this option, this feature is determined by the setting you've made on the control panel of the machine, affecting print quality accordingly. • **Normal**: This setting prints images in the normal mode. • **Text Enhance**: This setting refines the print quality of characters by smoothing out jagged edges that can occur on the angles and curves of each character. • **Image Enhance**: This setting refines the print quality of photo images.

Property	Description
❸ **Toner Save Mode**	Selecting this option extends the life of your toner cartridge and reduces your cost per page without a significant reduction in the print quality. • **Printer Setting**: When you select this option, the Toner Save feature is determined by the setting you've made on the control panel of the machine affecting print quality accordingly. • **On**: Select this option to allow the machine to use less toner on each page. • **Off**: When you do not need to save toner to print a document, select this option.
❹ **Advanced Options**	You can use advanced settings by clicking the **Advanced Options** button.  **TrueType Options** This option determines how the driver tells the machine to image the text in your document. Select the appropriate setting according to the status of your document. • **Download as Outline**: When this option is selected, the driver will download any TrueType fonts that are used in your document that are not already stored (resident) in your machine. If, after printing a document, you find that the fonts did not print correctly, choose **Download as Bit Image** and resubmit your print job. The **Download as Bit Image** setting is often useful when printing Adobe. • **Download as Bit Image**: When this option is selected, the driver downloads the font data as bitmap images. Documents with complicated fonts, such as Korean or Chinese, or various other types of fonts, print faster in this setting.

Property	Description
❹ **Advanced Options** (continued)	• **Print as Graphics**: When this option is selected, the driver downloads any fonts as graphics. When printing documents with high graphic content and relatively few TrueType fonts, printing performance (speed) may be enhanced in this setting. **Print All Text Black** When the **Print All Text Black** option is checked, all text in your document prints in solid black, regardless of the color it appears on the screen. When this option is not checked, colored text prints in shades of gray.

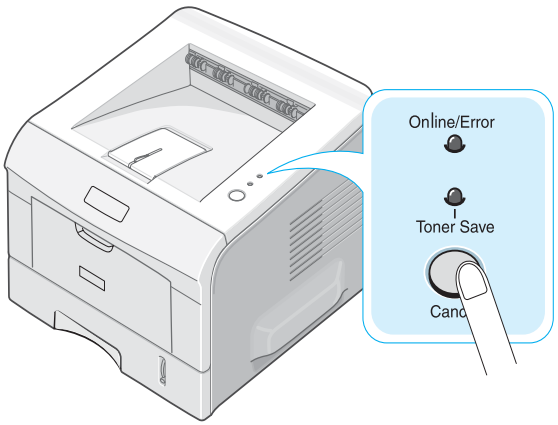
Using the Toner Save Mode

Toner Save mode allows the printer to use less toner on each page. Using this mode will extend the life of your toner cartridge and reduce your cost per page, but will reduce the print quality. This setting is not available with the 1200 dpi setting.

There are two ways to enable the Toner Save mode:

From the Control Panel

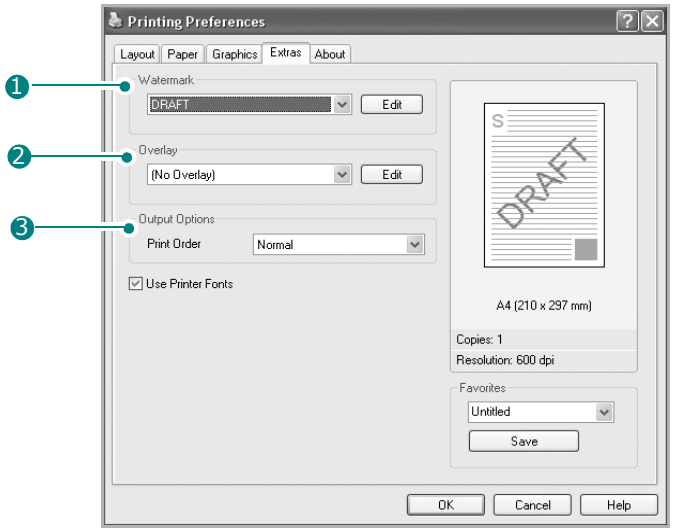
Press the Cancel button on the control panel for 0.5 second.
The printer must be in Ready mode(**Toner Save** green LED is on)



- If the **Toner Save** LED is on, the mode is enabled and the printer uses less toner to print a page.
- If the **Toner Save** LED is off, the mode is disabled and the printer prints in the normal mode.

Extras Tab

See page 4.2 for more information about accessing printer properties. Click the **Extras** tab to access the following features:



Option	Description
❶ **Watermark**	You can create a background image of text to print on each page of your document. See "Using Watermarks" on page 4.21.
❷ **Overlay**	Overlays are often used to take the place of preprinted forms and letterhead paper. See "Using Overlays" on page 4.24.

Option	Description
❸ **Output Options**	**Print Order**: You can set the sequence for the pages to print. Select the print order from the drop-down list. • **Normal**: Your machine prints all pages from the first page to the last page. • **Reverse All Pages**: Your machine prints all pages from the last page to the first page. • **Print Odd Pages**: Your machine prints only the odd numbered pages of the document. • **Print Even Pages**: Your machine prints only the even numbered pages of the document. **Use Printer Fonts**: When this option is selected, the machine uses the fonts that are stored in its memory (resident fonts) to print your document, rather than downloading the fonts used in your document. Because downloading fonts takes time, selecting this option can speed up your printing time.

About Tab

Use the **About** tab to display the copyright notice and the version number of the driver. See page 4.2 for more information about accessing printer properties.

Printer Tab

If you access printer properties through the **Printers** folder, you can view the **Printer** tab. Click the **Printer** tab to access the following properties:

- **Optional Tray**: If you install an optional Tray 2, in the printer properties window, you can tell the machine to recognize and use it for PC-printing by selecting **Tray 2** in the **Optional Tray** drop down list.
- **High Altitude Correction**: If your machine is going to be used at an altitude above 1,500 m, checking this option will optimize the print quality for those circumstances.

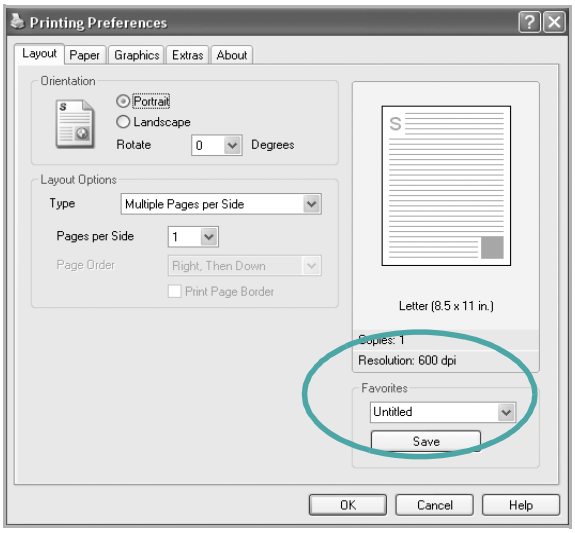
Using a Favorite Setting

The **Favorites** option, available on each tab, except for the **About** tab, allows you to save the current properties settings for future use.

To save a Favorites item:

1 Change the settings on each tab, as needed.

2 Enter a name for the item in the **Favorites** input box.



3 Click **Save**.

To use a saved setting, select it from the **Favorites** drop-down list.

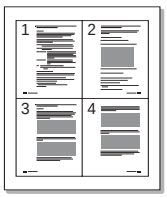
To delete a favorite setting item, select it from the list and click **Delete**.

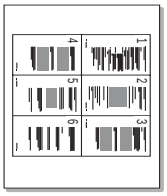
You can also restore the printer driver's default settings by selecting **Printer Default** from the list.

Using Help

Your machine has a help screen that can be activated using the **Help** button in the printer properties window. The help screen gives detailed information about the printer features provided by the printer driver.

You can also click ? in the upper right hand corner, and then click on any setting.





Printing Multiple Pages on One Sheet of Paper

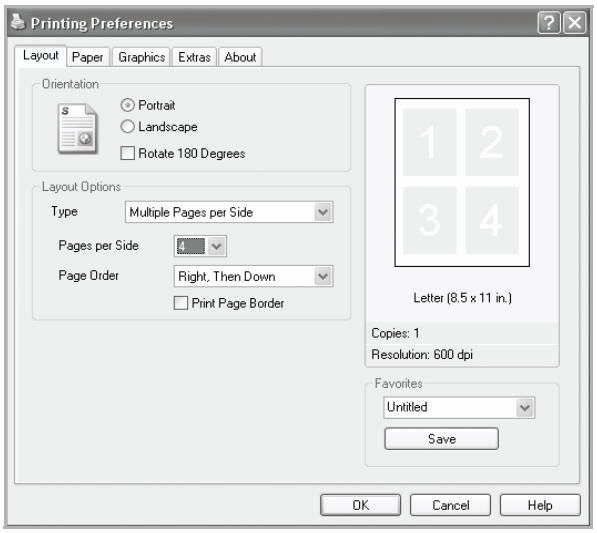
You can select the number of pages to print on a single sheet of paper. To print more than one page per sheet, the pages are reduced in size and arranged in the order you specify. You can print up to 16 pages on one sheet.

1 To change the print settings from your software application, access printer properties. See page 4.2.

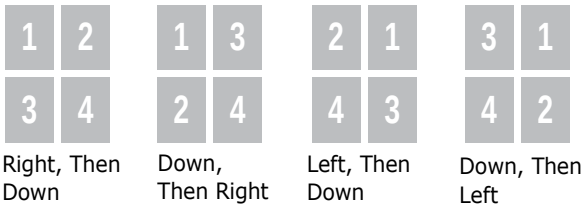
2 From the **Layout** tab, choose **Multiple Pages per Side** from the **Type** drop-down list.

NOTE: This feature is not available when you select **Fit to Page** or **Reduce/Enlarge** from the **Paper** tab.

3 Select the number of pages you want to print per sheet (1, 2, 4, 6, 9, or 16) on the **Pages per Side** drop-down list.



4 Select the page order on the **Page Order** drop-down list, if necessary.



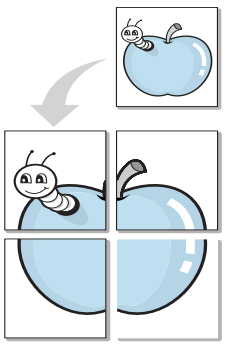
Check **Print Page Border** to print a border around each page on the sheet.

NOTE: **Page Order** and **Print Page Border** are enabled only when the number of pages per side is 2, 4, 6, 9, or 16.

5 Click the **Paper** tab and select the paper source, size, and type.

6 Click **OK** and print the document.

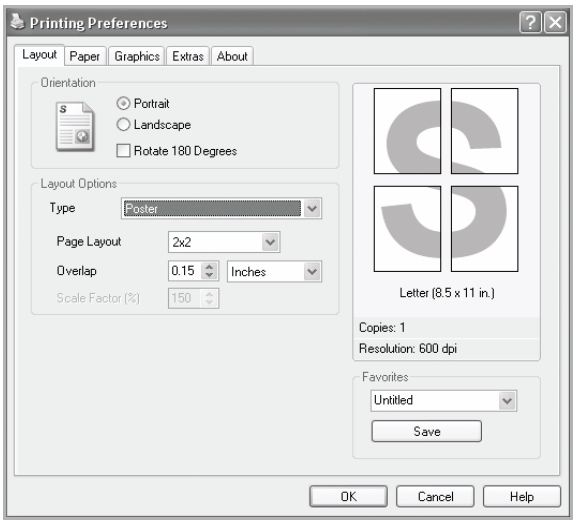
Printing Posters



You can print a single-page document onto 4, 9, or 16 sheets of paper, for the purpose of pasting the sheets together to form one poster-sized document.

1 To change the print settings from your software application, access printer properties. See page 4.2.

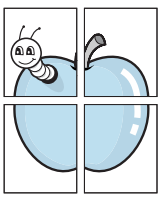
2 From the **Layout** tab, select **Poster** on the **Type** drop-down list.



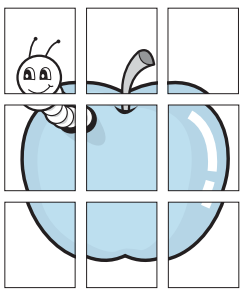
NOTE: This feature is not available when you select **Fit to Page** or **Reduce/Enlarge** from the **Paper** tab.

3 Configure the poster option:

You can select the page layout from **2x2**, **3x3**, **4x4**, or **Custom**. If you select **2x2**, the image is automatically stretched to cover 4 physical pages.



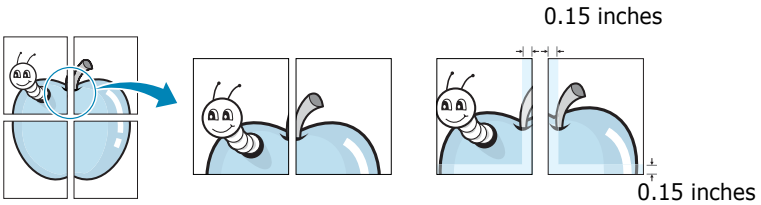
▲ 2 x 2



▲ 3 x 3

If you select **Custom**, you can manually set the scale rate of the image in the **Scale Factor** input box.

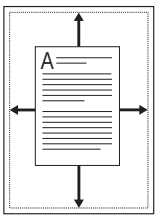
Specify an overlap in millimeters or inches to make it easier to reconstruct the resulting poster.



4 Click the **Paper** tab and select the paper source, size, and type.

5 Click **OK** and print the document. You can complete the poster by pasting the sheets together.

Fitting Your Document to a Selected Paper Size



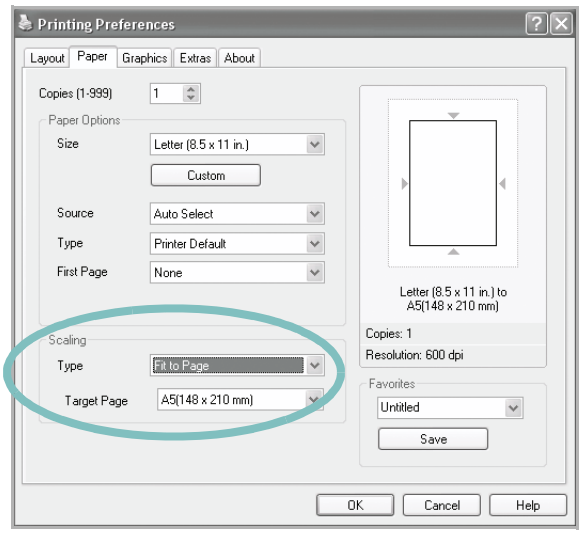
You can scale your print job to any paper size regardless of the original document size. This can be useful when you want to check the fine details on a small document.

1. To change the print settings from your software application, access printer properties. See page 4.2.

2. From the **Paper** tab, select **Fit to Page** on the **Type** drop-down list.

NOTE: This feature is not available when you select **Poster** or **Multiple Pages per Side** from the **Layout** tab.

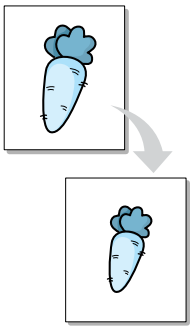
3. Select the correct size from the **Target Page** drop-down list.



4. Click the **Paper** tab and select the paper source and type.

5. Click **OK** and print the document.

Printing a Reduced or Enlarged Document



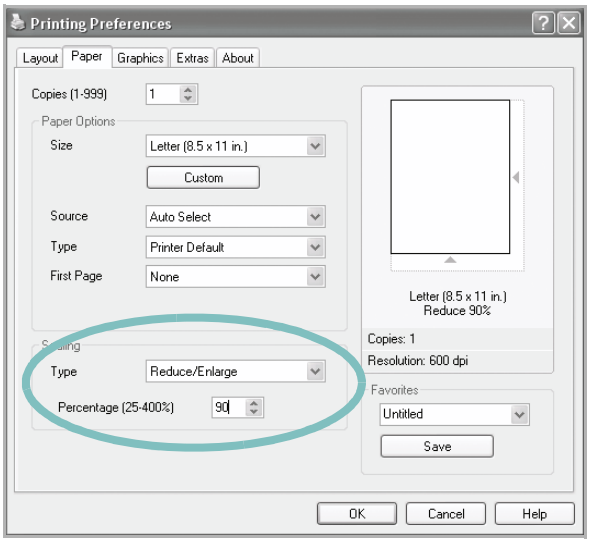
You can change the size of a page's content to appear larger or smaller on the printed page.

1. To change the print settings from your software application, access printer properties. See page 4.2.

2. From the **Paper** tab, select **Reduce/Enlarge** on the **Type** drop-down list.

3. Enter the scaling rate in the **Percentage** input box.

 You can also click the ▲ or ▼ button.



NOTE: This feature is not available when you select **Poster** or **Multiple Pages per Side** from the **Layout** tab.

4. Click the **Paper** tab and select the paper source, size, and type.

5. Click **OK** and print the document.

Using Watermarks



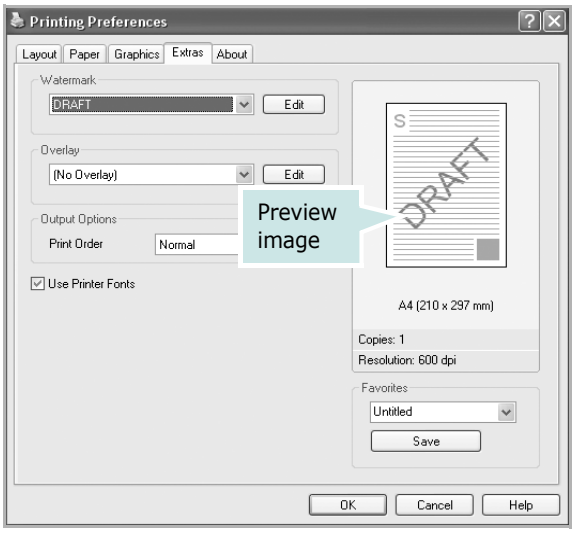
The Watermark option allows you to print text over an existing document. For example, you may want to have large gray letters reading "DRAFT" or "CONFIDENTIAL" printed diagonally across the first page or all of the pages of a document.

There are several predefined watermarks that come with your machine, and they can be modified or you can add new ones to the list.

Using an Existing Watermark

1. To change the print settings from your software application, access printer properties. See page 4.2.

2. Click the **Extras** tab and select a watermark on the **Watermark** drop-down list. It appears in the preview image window.

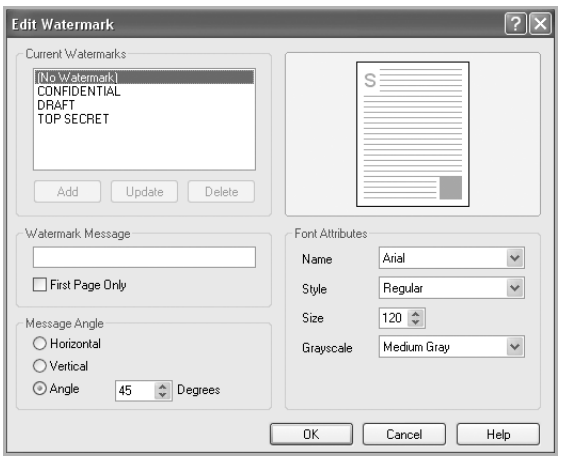


3. Click **OK** and start printing.

Creating a Watermark

1. To change the print settings from your software application, access printer properties. See page 4.2.

2. Click the **Extras** tab and click **Edit** in the **Watermark** section. The Edit Watermark window appears.



3. Enter the text message you want to print in the **Watermark Message** box.

 The message displays in the preview image window.

 When the **First Page Only** box is checked, the watermark prints on the first page only.

4. Select the watermark options.

 You can select the font name, style, size, and gray scale level from the **Font Attributes** section and set the angle of the watermark from the **Message Angle** section.

5. Click **Add** to add the new watermark to the list.

6. When you finish creating, click **OK** and start printing.

To stop printing the watermark, select **[No Watermark]** on the **Watermark** drop-down list.

Editing a Watermark

1. To change the print settings from your software application, access printer properties. See page 4.2.
2. Click the **Extras** tab and click **Edit** in the **Watermark** section. The Edit Watermark window appears.
3. Select the watermark you want to edit on the **Current Watermarks** list. You can change the watermark message and the options. Refer to page 4.22.
4. Click **Update** to save the changes.
5. Click **OK**.

Deleting a Watermark

1. To change the print settings from your software application, access printer properties. See page 4.2.
2. From the **Extras** tab, click **Edit** in the **Watermark** section. The Edit Watermark window appears.
3. Select the watermark you want to delete on the **Current Watermarks** list and click **Delete**.
4. Click **OK**.

Using Overlays

What is an Overlay?

An overlay is text and/or images stored on the computer hard disk drive (HDD) as a special file format that can be printed on any document. Overlays are often used to take the place of preprinted forms and letterhead paper. Rather than using preprinted letterhead, you can create an overlay containing the exact same information that is currently on your letterhead. To print a letter with your company's letterhead, you need only tell the machine to print the letterhead overlay on your document.

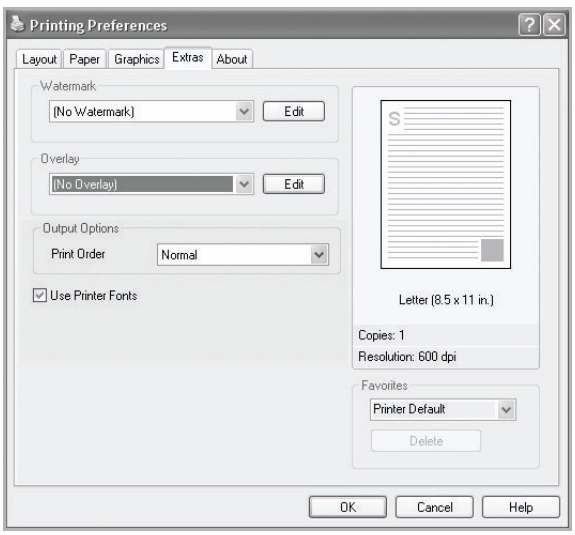
Creating a New Page Overlay

To use a page overlay, you must create a page overlay containing a logo or image.

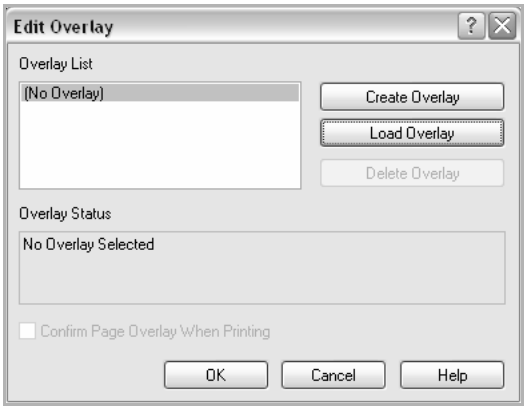
1. Create or open a document containing text or an image for use in a new page overlay. Position the items exactly as you wish them to appear when printed as an overlay.

2. To save the document as an overlay, access printer properties. See page 4.2.

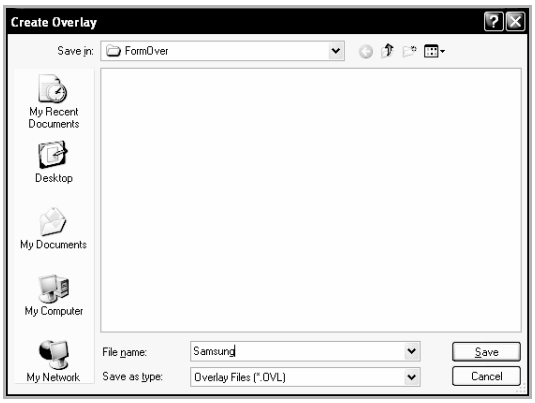
3. Click the **Extras** tab and click **Edit** in the **Overlay** section.



4 In the Edit Overlay window, click **Create Overlay**.



5 In the Create Overlay window, type a name of up to eight characters in the **File name** box. Select the destination path, if necessary. (The default is C:\Formover).



6 Click **Save**. The name appears on the Overlay List.

7 Click **OK** or **Yes** to finish creating.

The file is not printed out. Instead it is stored in your computer HDD disk.

NOTE: The overlay document size must be the same as the documents you print with the overlay.

Using a Page Overlay

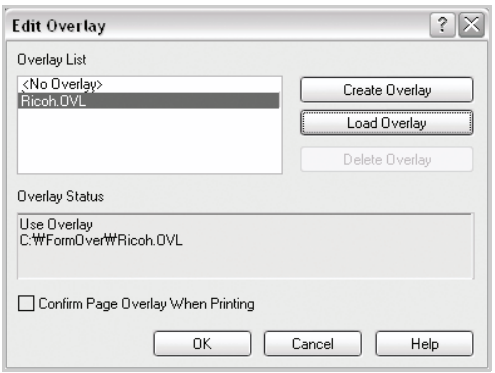
After an overlay has been created, it is ready to be printed with your document. To print an overlay with a document:

1. Create or open the document you want to print.
2. To change the print settings from your software application, access printer properties. See page 4.2.
3. Click the **Extras** tab.
4. Select the overlay you want to print from the **Overlay** drop-down list box.
5. If the overlay file you want doesn't appear on the Overlay List, click **Edit** and **Load Overlay**, and select the overlay file.



If you have stored the overlay file you want to use in an external source, you can also load the file when you access this Load Overlay window.

After you select the file, click **Open**. The file appears on the Overlay List and is available for printing. Select the overlay from the **Overlay List** box.



6 If necessary, click **Confirm Page Overlay When Printing**. When this box is checked, a message window appears each time you submit a document for printing, asking you to confirm your wish to print an overlay on the document.

Answering **Yes** in the window means that the selected overlay prints with your document. Answering **No** to the window cancels overlay printing.

If this box is empty and an overlay has been selected, the overlay will be automatically printed with your document.

7 Click **OK** or **Yes** until the printing starts.

The overlay downloads with your print job and prints on your document.



NOTE: The resolution of the overlay document must be the same as that of the document you will print with the overlay.

Deleting a Page Overlay

You can delete page overlays that you no longer use.

1. In the printer properties window, click the **Extras** tab.
2. Click **Edit** in the Overlay section.
3. Select the overlay you want to delete from the Overlay List box.
4. Click **Delete Overlay**.
5. When a confirmation message window appears, click **Yes**.
6. Click **OK** until you exit the Print window.

Using the Status Monitor

If an error occurs while printing, the Status Monitor window appears, showing the error.

NOTES:

- The Status Monitor program can only be used if you connect the printer to your computer with the USB cable, or on the network.
- You can use the Status Monitor in Windows 98/Me/NT 4.0/2000/XP.

Installing Status Monitor

1. Insert the supplied CD-ROM into your CD-ROM drive.

 The CD-ROM should automatically run and an maintenance window appears.

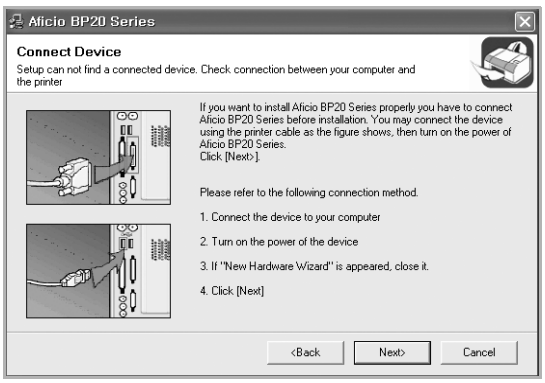
 If the maintenance window does not appear, click **Start** and then **Run**. Type **X:\Setup.exe**, replacing "**X**" with the letter of your drive and click **OK**.

2. Click **Next**.

3. Select **Custom installation**. Click **Next**.

4. Select your printer and click **Next**.

NOTES: If your printer is not already connected to the computer, the following window will appear.



- After connecting the printer, click **Next**.
- If you don't want to connect the printer at this time, click **Next**, and **No** on the following screen. Then the installation will start and a test page will not be printed at the end of the installation.

5. Click **Status Monitor** and then click **Next**.

6 If the test page prints out correctly, click **Yes**.

If not, click **No** to reprint it.

7 When the installation is completed, click **Finish**.

Reinstalling Status Monitor

1 From the **Start** menu, select **Programs**.

2 Select **BP20 Series**, and then **Maintenance**.

3 Click **Repair**.

4 Click **Status Monitor** and then click **Next**.

5 When reinstallation is completed, click **Finish**.

Removing Status Monitor

1 From the **Start** menu, select **Programs**.

2 Select **BP20 Series**, and then **Maintenance**.

3 Check **Remove**.

4 Click **Status Monitor** and then click **Next**.

5 Then your computer asks you to confirm your selection, click **Yes**.

The selected driver and all of its components are removed from your computer.

6 After the software is removed, click **Finish**.

Opening the Troubleshooting Guide

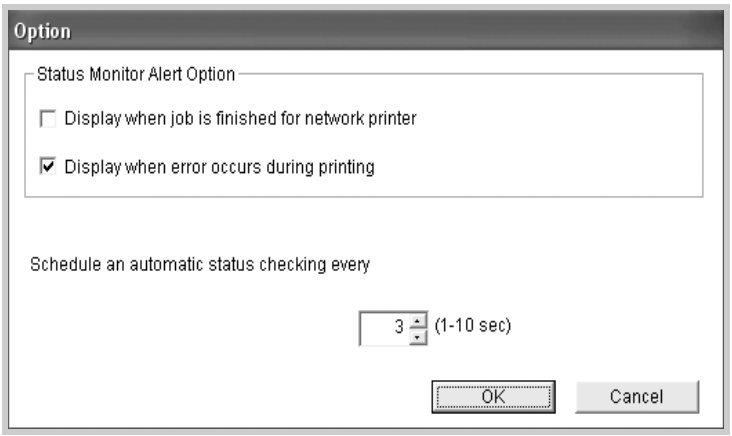
Double click the Status monitor icon on the Windows task bar.



Or, From the **Start** menu, select **Programs** or **All Programs**→ **BP20 Series** →**Troubleshooting guide**.

Changing the Status Monitor Program Setting

The following window opens when you click the Status monitor icon on the Windows task bar and select **Option**.



- **Display when job is finished for network printer** shows the Status monitor balloon when your job is complete.
- **Display when error occurs during printing** the Status monitor balloon appears when an error occurs while printing.
- **Schedule an automatic status checking every** allows the computer to update the printer status regularly. Setting the value close to 1 second causes the computer to check the printer status more frequently, thereby allowing a faster response to any printer error.

NOTE: When the Status monitor balloon appears to indicate an error, you can cancel the current print job or see the corresponding solution. If you select **Cancel Printing**, turn the printer off and then click **OK**. It may take several minutes. Note that this will lose data which is being sent to the printer via network.

Setting Up a Locally Shared Printer

Locally-Shared Printer

You can connect the printer directly to a selected computer, which is called the "host computer" on the network. The printer can then be shared by other users on the network through a Windows 9x/Me/XP/NT 4.0/2000 network printer connection.

Printing Across a Network

Whether the printer is locally connected or network-connected, you need to install the BP20 series printer software on each computer that will print documents to the printer.

In Windows 9x/Me

Setting Up the Host Computer

1. Start Windows.
2. From the **Start** menu, select **Control Panel**, and double-click on the **Network** icon.
3. Check the **File and Print Sharing** box, and click **OK**. Close the window.
4. From the **Start** menu, select **Printers** from **Settings** and double-click your printer name.
5. Select **Properties** in the **Printer** menu.
6. Click the **Sharing** tab and check the **Shared As** box. Fill in the **Shared Name** field and click **OK**.

Setting Up the Client Computer

1. Right-click the Windows **Start** button and select **Explorer**.
2. Open your network folder in the left column.
3. Right-click the shared name and select **Capture Printer Port**.
4. Select the port you want, check the **Reconnect at log on box**, and click **OK**.
5. From the **Start** menu, select **Settings** and then **Printers**.
6. Double-click your printer icon.
7. From the **Printer** menu, select **Properties**.
8. From the **Details** tab, select the printer port and click **OK**.

In Windows NT 4.0/2000/XP

Setting Up the Host Computer

1. Start Windows.
2. For Windows NT 4.0/2000, select **Settings**, and **Printers** from the **Start** menu.

 For Windows XP, select **Printers and Faxes** from the **Start** menu.
3. Double-click your printer icon.
4. From the **Printer** menu, select **Sharing**.
5. For Windows NT 4.0, check the **Shared** box.

 For Windows 2000, check the **Shared As** box.

 For Windows XP, check the **Share this printer** box.
6. For Windows NT 4.0, fill in the **Share Name** field and click **OK**.

 For Windows 2000/XP, fill in the **Shared Name** field and click **OK**.

Setting Up the Client Computer

1. Right-click the Windows **Start** button and select **Explorer**.
2. Open your network folder in the left column.
3. Click the shared name.
4. For Windows NT 4.0/2000, select **Settings** and **Printers** from the **Start** menu.

 For Windows XP, select **Printers and Faxes** from the **Start** menu.
5. Double-click your printer icon.
6. From the **Printer** menu, select **Properties**.
7. From the **Ports** tab, click **Add Port**.
8. Select **Local port** and click **New Port**.
9. Fill in the **Enter a port name** field, enter the shared name.
10. Click **OK** and click **Close**.
11. For Windows NT 4.0, click **OK**.

 For Windows 2000/XP, click **Apply** and click **OK**.

MEMO

5 Maintaining Your printer

This chapter provides suggestions for high-quality and economical printing and information for maintaining the toner cartridge and the printer.

This chapter includes:

- **Maintaining the Toner Cartridge**
- **Cleaning the Printer**
- **Printing Configuration Pages**

Maintaining the Toner Cartridge

Toner cartridge storage

To get the maximum results from the toner cartridge, keep the following guidelines in mind.

- Do not remove the toner cartridge from its package until ready for use.
- Do not refill the toner cartridge. **The printer warranty does not cover damage caused by using a refilled cartridge.**
- Store toner cartridges in the same environment as the printer.
- To prevent damage to the toner cartridge, do not expose it to light for more than a few minutes.

Toner cartridge life expectancy

The life of the toner cartridge depends on the amount of toner that print jobs require. When printing text at ISO 19752 5% coverage, a new toner cartridge lasts an average of 5,000 pages.(The original toner cartridge supplied with the machine lasts an average of 3,500 pages.) The actual number may be different depending on the print density of the page you print. If you print a lot of graphics, you may need to change the cartridge more often.

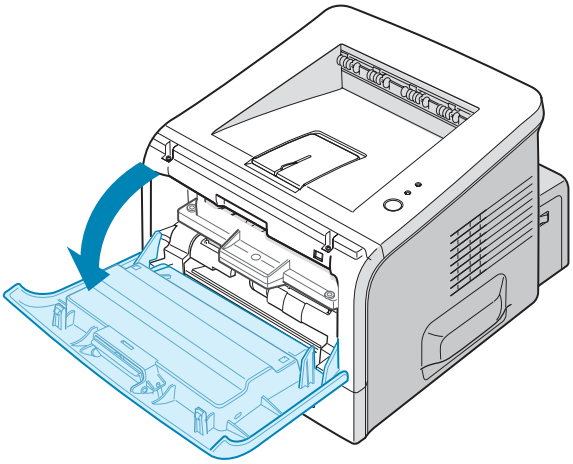
Saving toner

To save toner, press the **Cancel** button on the printer control panel for 0.5 second. The button will be lit. You can also enable the Toner Save in the printer properties. Refer to "Using the Toner Save Mode" on page 4.11. Selecting this option will extend the life of the toner cartridge and reduce your cost per page, but will reduce the print quality.

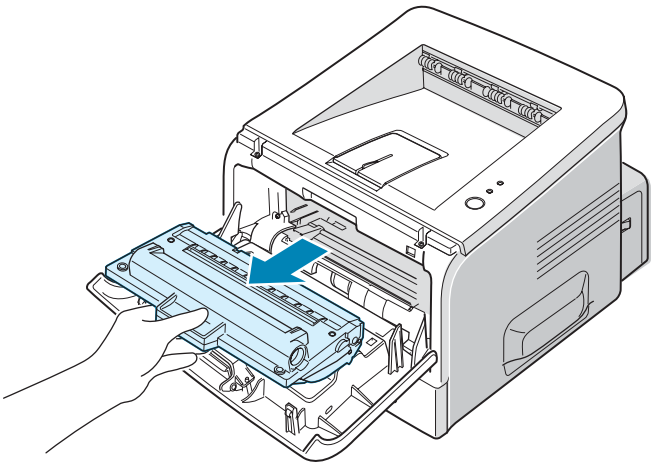
Redistributing Toner

When toner is low, faded or light areas may appear on a printed page. You may be able to temporarily improve the print quality by redistributing the toner. The following procedures may allow you to finish the current print job before replacing the toner cartridge.

1 Grasp the front cover and pull it toward you to open.



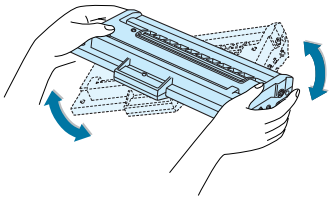
2 Pull the toner cartridge and remove it from the printer.



CAUTION: Avoid reaching too far into the printer. The fusing area may be hot.

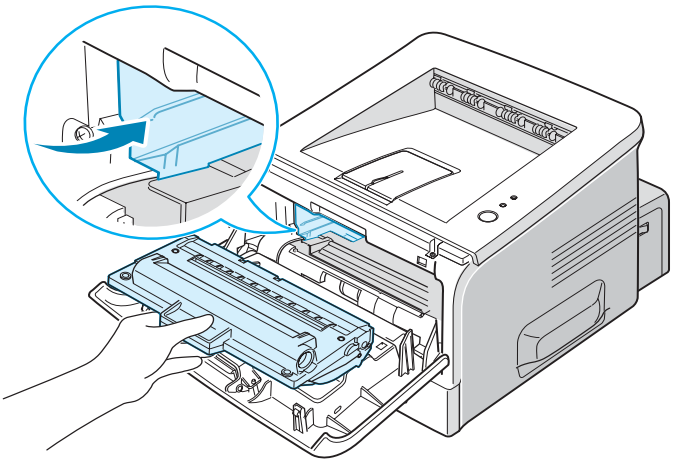
NOTE: To prevent damage to the toner cartridge, do not expose it to light for more than a few minutes. Cover it with a piece of paper, if left exposed for more than a few minutes and keep it in a flat and clean place.

3 Gently shake the toner cartridge from side to side five or six times to redistribute the toner.

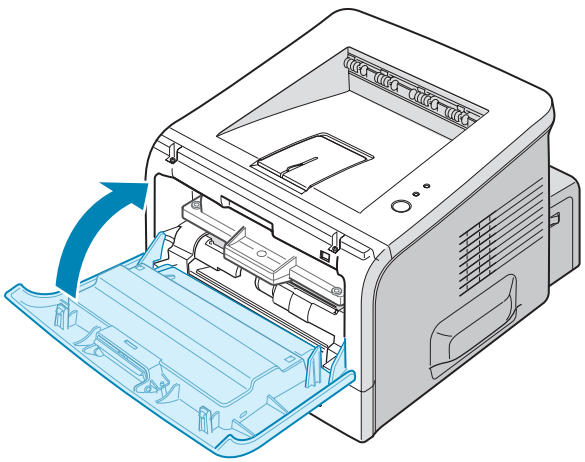


NOTE: If toner gets on your clothing, wipe it off with a dry cloth and wash clothing in cold water. Hot water sets toner into fabric.

4 Reinsert the toner cartridge into the printer. Ensure that the toner cartridge snaps into place.



5 Close the front cover. Make sure that the cover is securely closed. If it is not firmly closed, printing errors may occur when you print.



Replacing the Toner Cartridge

If the print remains light after redistributing the toner (see page 5.3), replace the toner cartridge.

Remove the old cartridge and install a new toner cartridge. See "Installing the Toner Cartridge" on page 2.4.

Cleaning the Printer

To maintain print quality, follow the cleaning procedures below each time the toner cartridge is replaced or if print quality problems occur.



NOTES:

- While cleaning the inside of the printer, be careful not to touch the transfer roller (located underneath the toner cartridge). Oil from your fingers can cause print quality problems.
- Cleaning the cabinet of the printer with surfactants containing large amounts of alcohol, solvent, or other strong substances can discolor or crack the cabinet.

Cleaning the Outside

Clean the cabinet of the printer with a soft, lint-free cloth. You can dampen the cloth slightly with water, but be careful not to let any water drip onto the printer or inside of it.

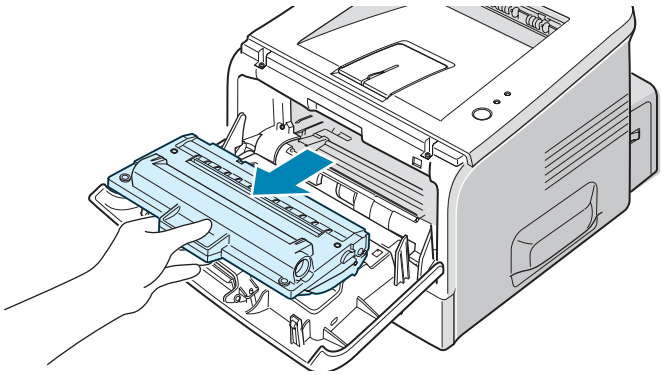
Cleaning the Inside

During the printing process, paper, toner, and dust particles can accumulate inside the printer. This buildup can cause print quality problems, such as toner specks or smearing. Cleaning the inside of the printer will eliminate or reduce these problems.

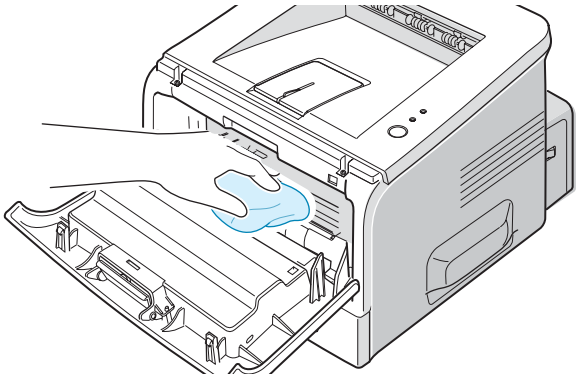
Cleaning inside the printer

1 Turn the printer off and unplug the power cord, then wait for the printer to cool.

2 Open the front cover. Pull the toner cartridge and remove it from the printer.

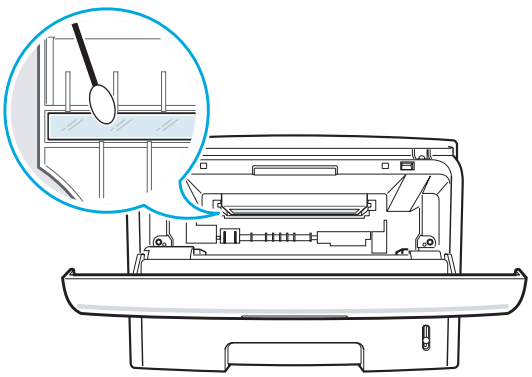


3 With a dry, lint-free cloth, wipe away any dust and spilled toner from the toner cartridge area and the toner cartridge cavity.

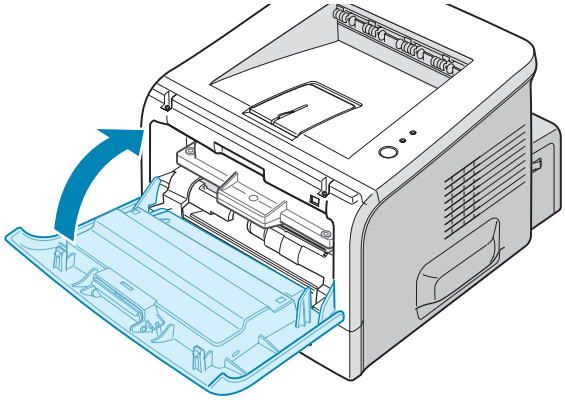


NOTE: To prevent damage to the toner cartridge, do not expose it to light for more than a few minutes. Cover it with a piece of paper, if necessary and keep it in a flat and clean place. Also, do not touch the black transfer roller inside the printer.

4 Locate the long strip of glass (LSU) inside the top of the cartridge compartment, and gently swab the glass to see if dirt turns the white cotton black.



5 Reinsert the toner cartridge and close the cover. Make sure that the cover is securely closed. If it is not firmly closed, printing errors may occur when you print.



6 Plug in the power cord, and turn the printer on.

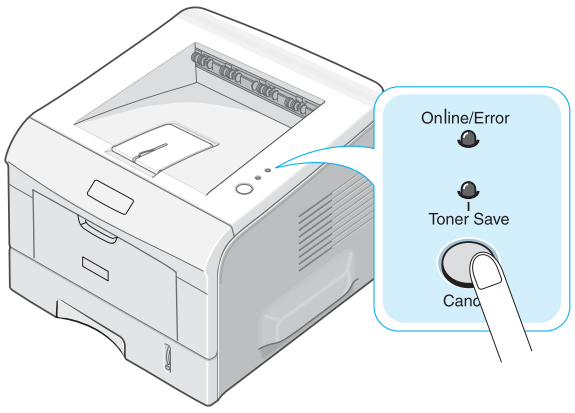
Printing a cleaning sheet

Your printer can be set to print out a cleaning sheet automatically every 500 print pages. you should use this feature if you use inferior quality paper, because such paper may lower print quality. See page A.6. This feature activates as a default depending on the country.

If you are experiencing blurred, faded, or smeared printouts, printing a cleaning sheet will clean the drum inside the toner cartridge. This process will produce a page with toner debris, which should be discarded.

1 Ensure that the printer is turned on and in the Ready mode with paper loaded in the tray.

2 Press and hold down the **Cancel** button on the control panel for about 10 seconds.



3 Your printer automatically picks up a sheet of paper from the tray and prints out a cleaning sheet with dust or toner particles on it.

NOTE: The cartridge cleaning process takes some time. To stop the process, turn the power off.

Printing Configuration Pages

From the printer's control panel, you can print a Configuration page. Use the configuration page to view current printer settings, to help troubleshoot printer problems, or to verify installation of optional accessories, such as memory, optional tray, and printer languages.

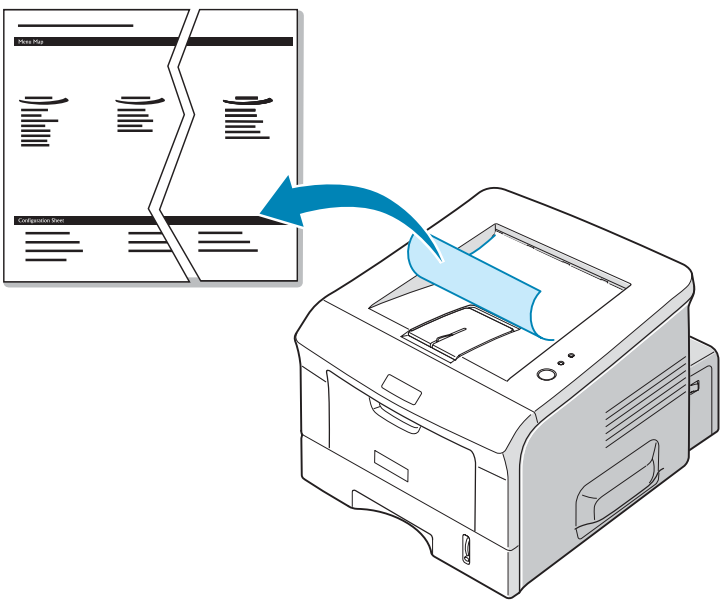
If your printer has a network card, the network configuration sheet prints out with a printer configuration sheet.

To print configuration pages:

1 Ensure that the printer is turned on and in the Ready mode with paper loaded in the tray.

2 Press and hold down the **Cancel** button on the control panel for about 6 seconds.

Configuration pages print out.



6 SOLVING PROBLEMS

This chapter provides helpful information for what to do if you encounter an error while using your printer.

This chapter includes:

- **Troubleshooting Checklist**
- **Solving General Printing Problems**
- **Solving Network Printing Problems**
- **Clearing Paper Jams**
- **Solving Print Quality Problems**
- **Troubleshooting Error Messages**
- **Common Windows Problems**

Troubleshooting Checklist

If the printer is not working properly, perform the series of checks in the list below. If the printer fails to adequately pass a checklist item, follow the corresponding troubleshooting suggestions.

Check	Solution
Print a demo page to verify that the printer is feeding paper correctly. See page 2.15.	• If a demo page does not print, check the paper supply in the paper tray. • If the paper jams in the printer, go to "Clearing Paper Jams" on page 6.8.
Check the demo page to see if it is printed correctly.	If there is a print quality problem, go to "Solving Print Quality Problems" on page 6.16.
Print a short document from a software application to verify that the computer and printer are connected and are communicating correctly.	• If the page does not print, check the cable connection between the printer and the computer. • Check the print queue or print spooler to see if the printer has been paused. • Check the software application to ensure that you are using the proper printer driver and communication port. If the page is interrupted during printing, go to "Solving General Printing Problems" on page 6.3.
If completing the checklist does not resolve the printer problem, check the following troubleshooting sections.	• "Solving General Printing Problems" on page 6.3. • "Troubleshooting Error Messages" on page 6.21. • "Common Windows Problems" on page 6.22.

Solving General Printing Problems

For problems with the operation of your printer, refer to the following table for suggested solutions.

Problem	Possible Cause	Solution
The printer does not print.	The printer is not receiving power.	Check the power cord connections. Check the power switch and the power source.
	The printer is not selected as the default printer.	Select **BP20 Series PCL6** as your default printer.
	Check the printer for the following:	• The printer cover is not closed. • Paper is jammed. • No paper is loaded. • The toner cartridge is not installed. If a printer system error occurs, contact your service representative.
	The printer may be in manual feed mode and out of paper.	Add paper to the Multi-Purpose Tray, and press the **Cancel** button on the printer's control panel.
	The connection cable between the computer and the printer is not connected properly.	Disconnect the printer cable and reconnect it.
	The connection cable between the computer and the printer is defective.	If possible test the cable by attaching it to another computer that is working properly and attempt to print a job. You can also try using a different printer cable and attempt to print a job.
	The port setting is incorrect.	Check the Windows printer setting to make sure that the print job is sent to the correct port, for example, LPT1. If the computer has more than one port, make sure that the printer is attached to the correct one.
	The printer may be configured incorrectly.	Check the printer properties to ensure that all of the print settings are correct.
	The printer driver may be incorrectly installed.	Reinstall the printer driver; see page 2.29. Try printing a demo page.
	The printer is malfunctioning.	Check the display message on the control panel to determine if the printer is indicating a system error.
Printer selects print materials from the wrong paper source.	The paper source selection in the printer properties may be incorrect.	For many software applications, the paper source selection is found under the **Paper** tab within the printer properties. Select the correct paper source. See page 4.6.

Problem	Possible Cause	Solution
Paper does not feed into the printer.	Paper has not been loaded correctly.	Remove paper from the tray and reload it correctly.
	There is too much paper in the paper tray.	Remove excess paper from the tray.
	The paper is too thick.	Use only paper that meets the specifications required by the printer. See page C.3.
Print job is extremely slow.	The job may be very complex.	Reduce the complexity of the page or try adjusting the print quality settings. The maximum print speed of your printer is 20 PPM (pages per minute) for A4-sized paper or 22 PPM for Letter-sized paper.
	If using Windows 9x/Me, the Spooling Setting may be set incorrectly.	From the **Start** menu, choose **Settings** and **Printers**. Right-click the **BP20 Series PCL6** printer icon, choose **Properties**, click the **Details** tab, and then choose the **Spool Settings** button. Select the desired spool setting.
	The computer may have insufficient random-access memory (RAM).	Install more memory in your printer. See "Installing Memory" on page B.3.
Half the page is blank.	The page layout is too complex.	Simplify the page layout and remove any unnecessary graphics from the document. Install more memory in your printer. See "Installing Memory" on page B.3.
	The page orientation setting may be incorrect.	Change the page orientation in your application. See page 4.5.
	The paper size and the paper size settings do not match.	Ensure that the paper size in the printer driver settings matches the paper in the tray.
The paper keeps jamming.	There is too much paper in the paper tray.	Remove excess paper from the tray. If printing on special materials, use the Multi-Purpose Tray.
	An incorrect type of paper is being used.	Use only paper that meets the specifications required by the printer. See page C.3.
	An incorrect output method is being used.	Special print materials, such as thick paper, should not be printed using the top output tray (face-down). Use the rear output tray (face-up) instead.
	There may be debris inside the machine.	Open the front cover and remove the debris.

Problem	Possible Cause	Solution
The printer prints, but the text is wrong, garbled, or incomplete.	The printer cable is loose or defective.	Disconnect the printer cable and reconnect. Try a print job that you have already printed successfully. If possible test the cable by attaching it to another computer that is working properly and attempt to print a job. You can also try using a different printer cable and attempt to print a job.
	The wrong printer driver was selected.	Check the application's printer selection menu to ensure that your printer is selected.
	The software application is malfunctioning.	Try printing a job from another application.
	The operating system is malfunctioning.	If printing from Windows (any version), exit to a DOS prompt and verify functionality with the following command: At a **C:** prompt, type **Dir LPT1**, and press **Enter**. (This assumes you are connected to LPT1.) Exit Windows and reboot the computer. Turn the printer off and then back on again.
Pages print, but are blank.	The toner cartridge is defective or out of toner.	Redistribute the toner. if necessary. See page 5.3. If necessary, replace the toner cartridge.
	The file may have blank pages.	Check the file to ensure that it does not contain blank pages.
	Some parts, such as the controller or the board, may be defective.	Contact a service representative.
The illustrations print incorrectly in Adobe Illustrator.	The setting in the software application is wrong.	Print the document with selecting **Download as Bit Image** in the **TrueType Options** window of the graphic properties.

ATTENTION: If you have any printing problem after your printer prints about 60,000 pages, you must contact the customer service to replace the transfer roller.

Solving Network Printing Problems

General Problems

Problem	Solution
System does not function with some wrong values entered by mistake while configuring.	Possibly the parameters in the network card are corrupted. Restart the system and set to factory defaults. See "Network card Default Setting (When you use the Network Card)" on page 1.7
Not able to access from SNMP Manager.	Try pinging from the same system on which SNMP manager is running. If it does not succeed, there must be a problem with network connectivity between the manager and the network card. If ping succeeds, verify that community names with sufficient permissions have been used.
You cannot see any of DHCP server, BOOTP server or RARP server, when you want to set IP address to print server.	You should set IP address, Subnet Mask and Default Gateway to print server using Set IP.
Print server does not print using TCP/IP protocol.	1. Check whether TCP/IP protocol is installed in your PC. 2. Check whether your PC is on the same network with print server.
The name of printer is displayed empty while adding a port and the printer doesn't function.	Assign IP Address by using the Set IP.

Windows Problems

Problem	Solution
The test page is not printed.	Turn off the printer, then turn it back on.
Set IP is unable to automatically detect printers.	1. Check LAN cable is connected to the printers. • Check LAN cable is connected to the printers yourself. • Make sure that there are the connected printers shown in network neighborhood. If not, check the communication status of the printers. • If IP address is assigned to the computers, try ping command. Make sure the computers and printers are on the same network segment. 2. If LAN is connected by routers, Set IP is unable to detect the printers. 3. Check entry values of IP address, subnet mask and default gateway.
The printer does not print.	①Check IP address ②Check Model name of the driver ③Try add a port ④Refer to the "Set IP"

Clearing Paper Jams

Occasionally, paper can jam during a print job. Some causes include:

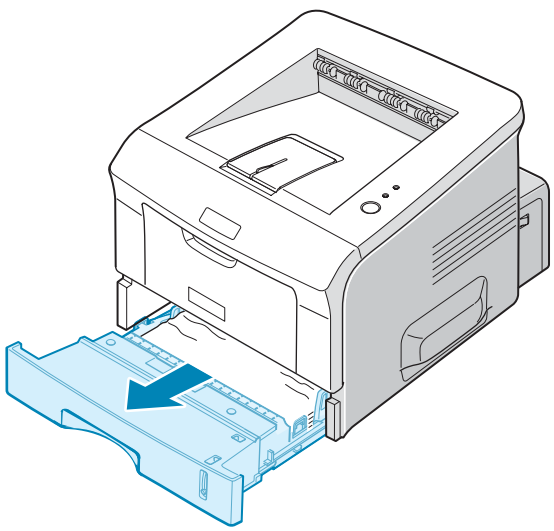
- The tray is loaded improperly or overfilled.
- The tray has been pulled out during a print job.
- The front cover has been opened during a print job.
- Paper that does not meet paper specifications has been used. See "Paper Specifications" on page C.3.
- Paper that is outside of the supported size range has been used. See "Paper Specifications" on page C.3.

If a paper jam occurs, the **Online/Error** LED on the control panel lights red. Find and remove the jammed paper. If you can't see it, look inside the printer.

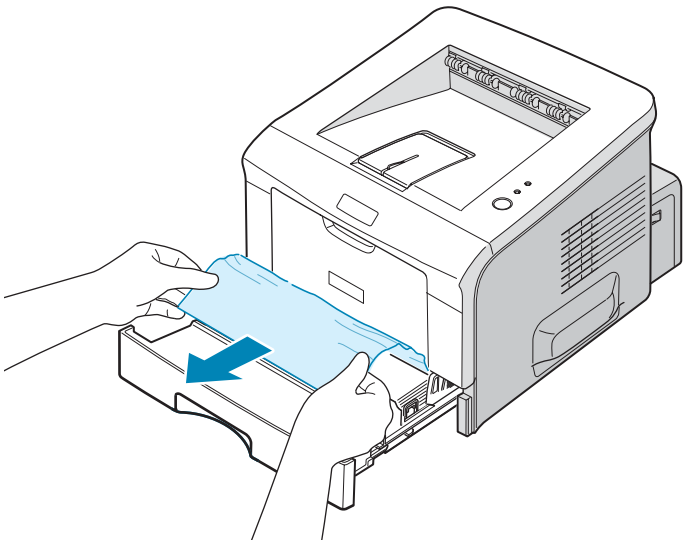
NOTE: Do not use tweezers or metal objects with sharp ends when you remove paper jams. If you do this, it may damage the metal parts inside of your machine and cause a short circuit.

In the Paper Feed Area

1 Slide out Tray1 to expose the jammed paper.

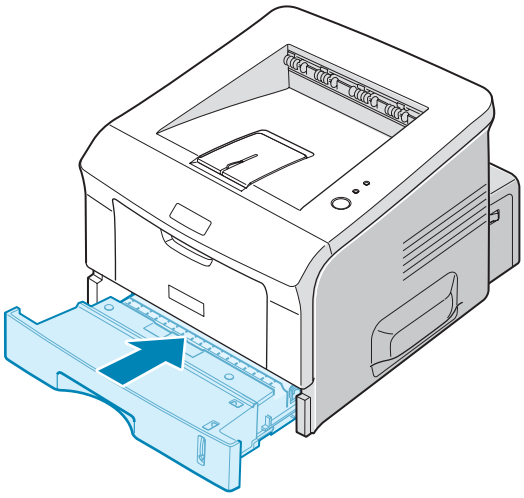


2 Remove any misfed paper by pulling it out by the visible edge. Make sure that all of the paper is properly aligned in the tray.



NOTE: If the jammed paper is not visible or if there is resistance when you pull the paper, remove the tray from the printer and carefully pull the jammed paper free from the printer.

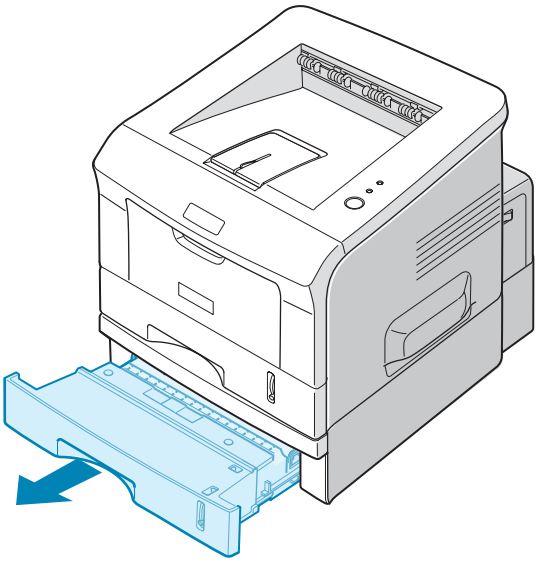
3 Slide the tray back into the printer.



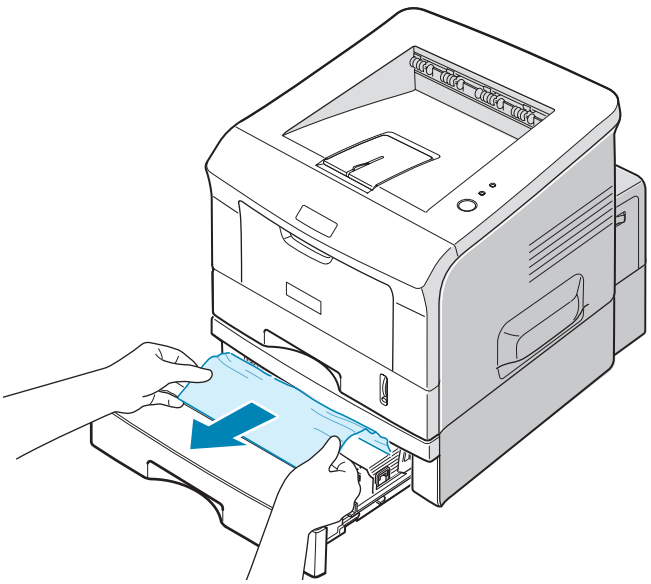
4 Open and close the front cover to resume printing.

In the Optional Tray2

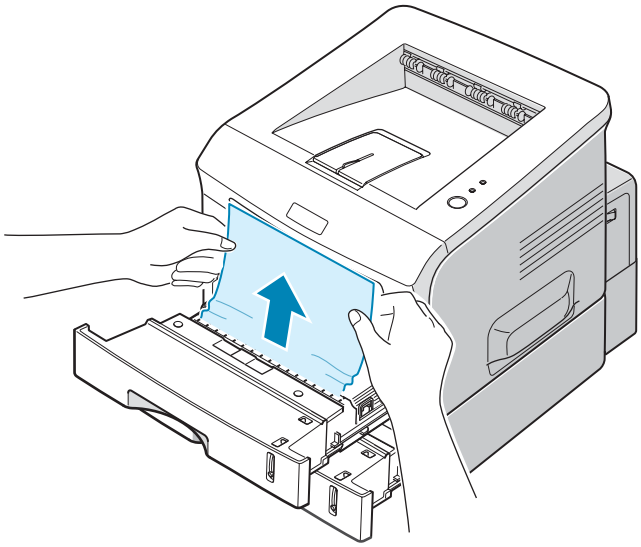
1 Pull the optional Tray2 out of the printer.



2 If you see the jammed paper, remove the paper from the tray.



3 If you cannot find the jammed paper in Tray2, pull Tray1 half way out of the printer, and remove the paper.

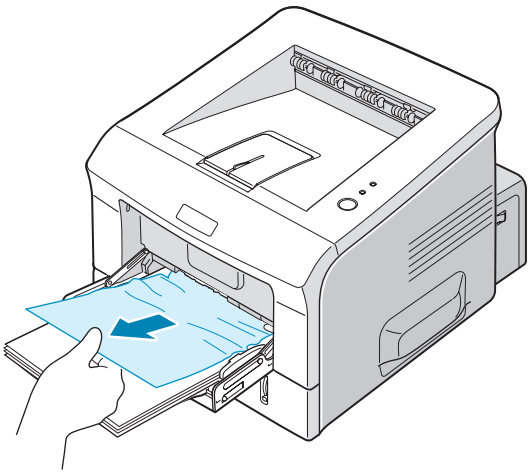


4 Slide the trays back into the printer. Open and close the front cover. Printing can now be resumed.

In the Multi-Purpose Tray

1 Open the Multi-Purpose Tray.

2 Carefully remove the jammed paper from the tray.



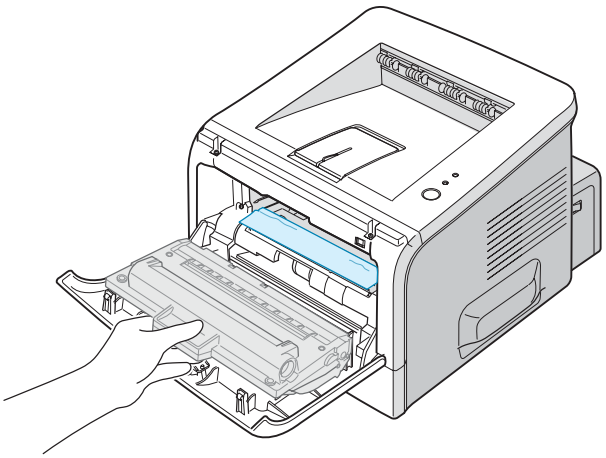
3 Open and close the front cover. Printing can now be resumed.

Around the Toner Cartridge

1 Open and close the front cover, and the jammed paper automatically exits the printer.

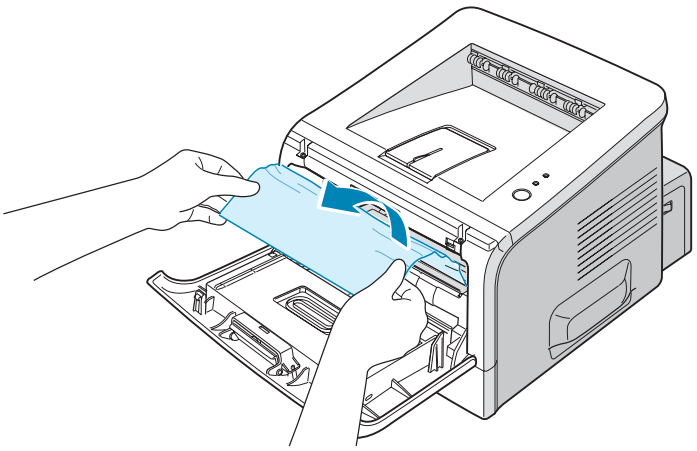
If not, continue to Step 2.

2 Open the front cover and remove the toner cartridge.



NOTE: To prevent damage to the toner cartridge, do not expose it to light for more than a few minutes. Place a piece of paper over the top of the toner cartridge to shield it while it is out of the printer and keep it in a flat and clean place.

3 Gently pull the jammed paper toward you to remove it from the printer.



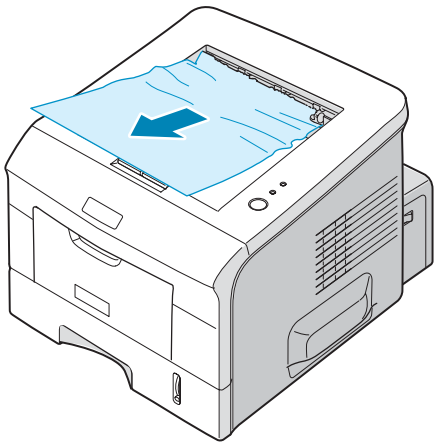
If the jammed paper is not visible or there is resistance when you pull the paper, go to "In the Paper Exit Area" on page 6.13.

4 Check that there is no other paper in the printer.

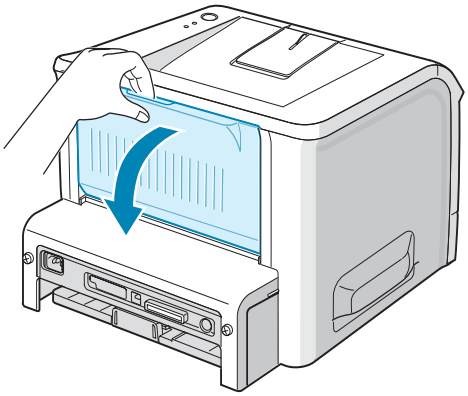
5 Reinstall the toner cartridge, and then close the front cover. Printing can now be resumed.

In the Paper Exit Area

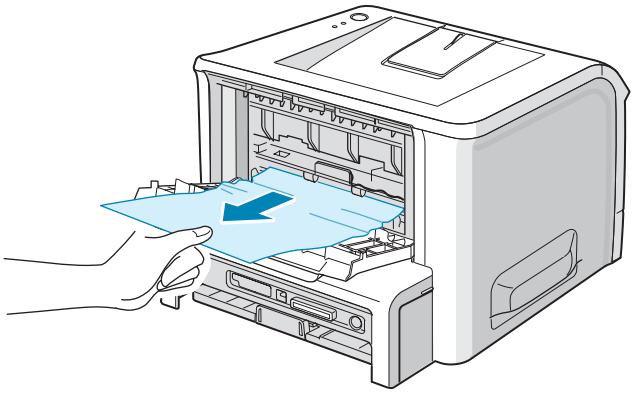
1 If a long portion of the paper is visible, pull it straight out. If not, continue to Step 2.



2 Open the rear output tray.



3 Loosen the paper if it is caught in the feed rollers. Then gently pull the paper out.



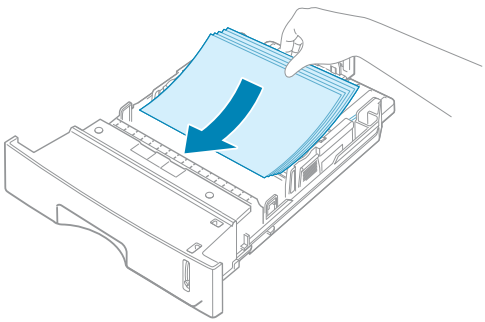
4 Close the rear output tray.

5 Open and close the front cover. Printing can now be resumed.

Tips for Avoiding Paper Jams When Printing on the A5-sized Paper

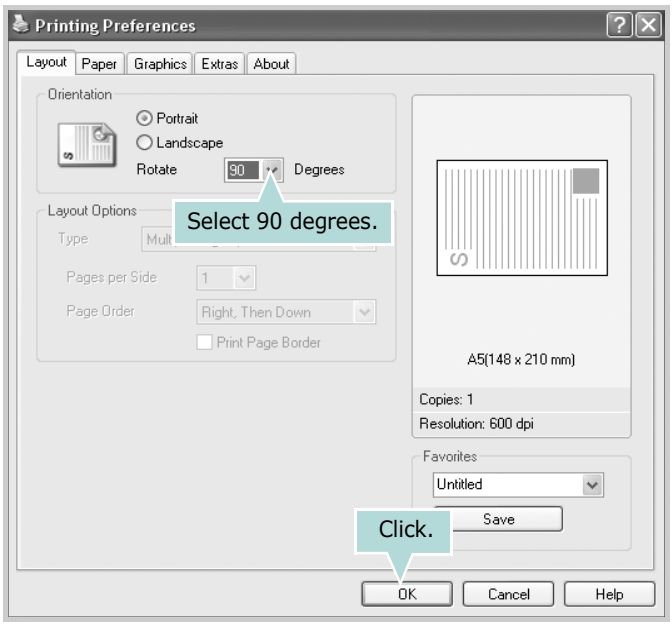
If paper jams frequently occur when you print on the A5-sized paper:

1 Open the input tray and load paper into the tray as shown below.



2 Open the **BP20 Series PCL6** Properties window, set the paper size to **A5 (148x210 mm)** from the **Paper** tab.

3 From the **Orientation** option of the **Layout** tab, set the **Rotate** option to **90º**.



4 Click **OK** to start printing.

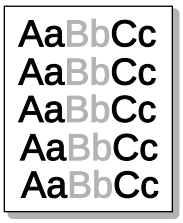
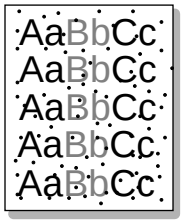
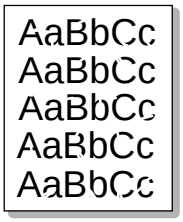
Tips for Avoiding Paper Jams

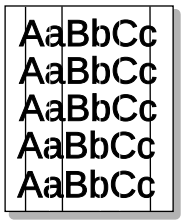
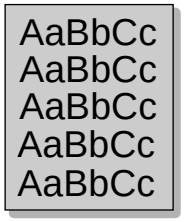
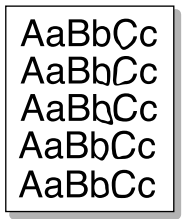
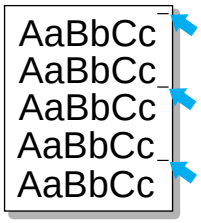
By selecting the correct paper types, most paper jams can be avoided. If a paper jam occurs, follow the steps outlined in "Clearing Paper Jams" on page 6.8.

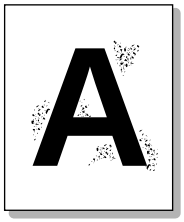
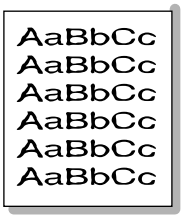
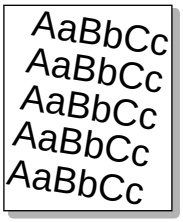
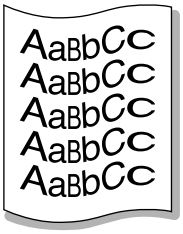
- Follow the procedures in "Loading Paper" on page 2.7. Ensure that the adjustable guides are positioned correctly.
- Do not overload the paper tray. Ensure that the paper is below the paper limit mark on the inside wall of the tray.
- Do not remove the paper from the tray while printing.
- Flex, fan, and straighten the paper before loading.
- Do not use creased, damp, or highly curled paper.
- Do not mix paper types in the tray.
- Use only recommended print materials. See "Paper Specifications" on page C.3.
- Ensure that the recommended print side is facing down when loading paper in the tray and facing up in the Multi-Purpose Tray.

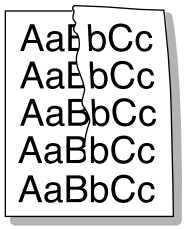
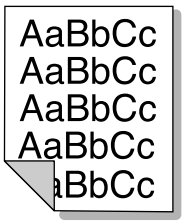
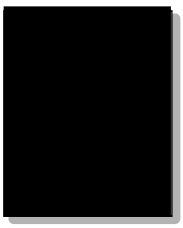
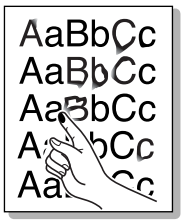
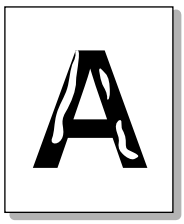
Solving Print Quality Problems

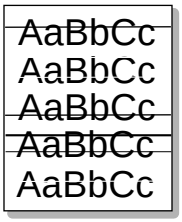
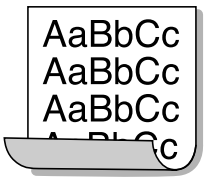
If the inside of the printer is dirty, or paper is improperly loaded, print quality maybe reduced. See the table below to troubleshoot the problem.

Problem	Solution
Light or faded print  	If a vertical white streak or faded area appears on the page: • The toner supply is low. You may be able to temporarily extend the toner cartridge life. See "Redistributing Toner" on page 5.3. If this does not improve the print quality, install a new toner cartridge. • The paper may not meet paper specifications (for example, the paper is too moist or too rough). See "Paper Specifications" on page C.3. • If the entire page is light, the print resolution setting is too light or Toner Save Mode is on. Adjust the print resolution and Toner Save Mode in the printer properties. See page 4.8. • A combination of faded or smeared defects may indicate that the toner cartridge needs cleaning. See "Cleaning the Inside" on page 5.5. • The surface of the LSU may be dirty. Clean the LSU. See "Cleaning the Inside" on page 5.5.
Toner specs  	• The paper may not meet specifications (for example, the paper is too moist or too rough). See "Paper Specifications" on page C.3. • The transfer roller may be dirty. See "Cleaning the Inside" on page 5.5. • The paper path may need cleaning. See "Cleaning the Inside" on page 5.5.
Dropouts  	If faded areas, generally rounded, occur randomly on the page: • A single sheet of paper may be defective. Try reprinting the job. • The moisture content of the paper is uneven or the paper has moist spots on its surface. Try a different brand of paper. See "Paper Specifications" on page C.3. • The paper lot is bad. The manufacturing processes can cause some areas to reject toner. Try a different kind or brand of paper. • The toner cartridge may be defective. See "Vertical repetitive defects" on the next page. • If these steps do not correct the problems, contact a service representative.

Problem	Solution
Vertical lines 	If black vertical streaks appear on the page: • The drum inside the toner cartridge has probably been scratched. Install a new toner cartridge.
Gray background 	If the amount of background shading becomes unacceptable, the procedures below may fix the problem. • Change to a lighter weight pages. See "Paper Specifications" on page C.3. • Check the printer's environment; very dry (low humidity) or high humidity (higher than 80% RH) conditions can increase the amount of background shading. • Remove the old toner cartridge and install a new one. See "Installing the Toner Cartridge" on page 2.4.
Toner smear 	• Clean the inside of the printer. See "Cleaning the Inside" on page 5.5. • Check the paper type and quality. See "Paper Specifications" on page C.3. • Remove the toner cartridge and install a new one. See "Installing the Toner Cartridge" on page 2.4.
Vertical repetitive defects 	If marks repeatedly appear on the printed side of the page at even intervals: • The toner cartridge may be damaged. If a repetitive mark occurs on the page, print a cleaning sheet several times to clean the cartridge; see page 5.7. After the printout, if you still have the same problems, install a new toner cartridge. See "Installing the Toner Cartridge" on page 2.4. • Parts of the printer may have toner on them. If the defects occur on the back of the page, the problem will likely correct itself after a few more pages. • The fusing assembly may be damaged. Contact a service representative.

Problem	Solution
Background scatter 	Background scatter results from bits of toner distributed on the printed page. • The paper may be too damp. Try printing with a different batch of paper. Do not open packages of paper until necessary so that the paper does not absorb too much moisture. • If background scatter occurs on an envelope, change the printing layout to avoid printing over areas that have overlapping seams on the reverse side. Printing on seams can cause problems. • If background scatter covers the entire surface area of a printed page, adjust the print resolution through your software application or the printer properties.
Misformed characters 	• If characters are improperly formed and producing hollow images, the paper stock may be too slick. Try a different paper. See "Paper Specifications" on page C.3. • If characters are improperly formed and producing a wavy effect, the scanner unit may need service. Verify that it also occurs on a demo page (see page 2.15). For service, contact a service representative.
Page skew 	• Check the paper type and quality. See "Paper Specifications" on page C.3. • Ensure that the paper or other material is loaded correctly and the guides are not too tight or too loose against the paper stack.
Curl or wave 	• Check the paper type and quality. Both high temperature and humidity can cause paper curl. See "Paper Specifications" on page C.3. • Turn over the stack of paper in the tray. Also try rotating the paper 180° in the tray. • Try printing to the face up output slot.

Problem	Solution
Wrinkles or creases 	Ensure that the paper is loaded properly. • Check the paper type and quality. See "Paper Specifications" on page C.3. • Open the rear cover and try printing to the rear output tray (face-up). • Turn over the stack of paper in the paper tray. Also try rotating the paper 180° in the tray.
Back of printouts are dirty 	• The transfer roller may be dirty. "Cleaning the Inside" on page 5.5. • Check for leaking toner. Clean the inside of the printer.
Black pages 	• The toner cartridge may not be installed properly. Remove the cartridge and reinsert. • The toner cartridge may be defective and need replacing. Install a new toner cartridge. • The printer may require repair. Contact a service representative.
Loose toner 	Clean the inside of the printer. • Check the paper type and quality. See "Paper Specifications" on page C.3. • Install a new toner cartridge. See "Installing the Toner Cartridge" on page 2.4. • If the problem persists, the printer may require repair. Contact a service representative.
Character Voids 	Character voids are white areas within the parts of characters that should be solid black: • If you are using transparencies, try another type of transparency. Because of the composition of the transparency, some character voids are normal. • You may be printing on the wrong side of the paper. Remove the paper and turn it around. • The paper may not meet paper specifications. See "Paper Specifications" on page C.3.

Problem	Solution
Horizontal stripes 	If horizontally aligned black streaks or smears appear: • The toner cartridge may be installed improperly. Remove the cartridge and reinsert. • The toner cartridge may be defective. Install a new toner cartridge. See "Installing the Toner Cartridge" on page 2.4. • If the problem persists, the printer may require repair. Contact a service representative.
Curl 	If the printed paper is curl or paper does not feed into the printer: • Turn over the stack of paper in the input tray. Also try rotating the paper 180° in the input tray.

Troubleshooting Error Messages

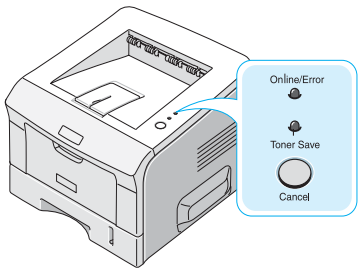
When the printer experiences an error, the control panel will indicate an error message with the indicator lights. Find the light pattern below that matches the printer light pattern and follow the solutions to clear the error.

LED status legend

symbol for "light off"

symbol for "light on"

symbol for "light blinking"



LED pattern	Possible Problems and Solutions
Online/Error Toner Save	Your system has some problems. If this problem occurs, contact your service representative.
Online/Error Toner Save Online/Error LED lights red	• A paper jam has occured. To solve the problem, see "Clearing Paper Jams" on page 6.8. • Paper Tray is empty. Load the paper in the Tray. • The front cover is open. Close the front cover.
Online/Error Toner Save Online/Error LED lights orange	The toner cartridge is near the end of its life. You can temporarily reestablish print quality by redistributing the remaining toner in the cartridge. "Redistributing Toner" on page 5.3.
Online/Error Toner Save Online/Error LED blinks red	• You pressed the **Cancel** button while the printer was receiving data. • In Manual Feed mode, there is no paper in the Multi-purpose Tray. Load paper into the Multi-purpose Tray. • If the printer is receiving data, the **Online/Error** LED slowly blinks green. • If the printer is printing the received data, the **Online/Error** LED blinks green fast.

LED pattern	Possible Problems and Solutions
 Online/Error LED blinks orange	The toner cartridge is empty. Remove the old toner cartridge and install a new one. See "Installing the Toner Cartridge" on page 2.4.
 Online/Error LED blinks orange and red alternately	The installed toner cartridge is not designed for your printer. Use the Ricoh-approved toner cartridge.

Common Windows Problems

Problem	Possible Cause and Solution
"File in Use" message appears during installation.	Exit all software applications. Remove all software from the StartUp Group, then restart Windows. Reinstall the printer driver.
"Error Writing to LPTx" message appears.	• Ensure that the cables are connected correctly, and the printer is on. • If bi-directional communication is not turned on in the driver, it will also cause this message.
"General Protection Fault", "Exception OE", "Spool32", or "Illegal Operation" messages appear.	Close all other applications, reboot Windows, and try printing again.

NOTE: Refer to the Microsoft Windows 9x/Me/NT 4.0/2000/XP User's Guide that came with your PC for further information on Windows error messages.

A Printing From DOS Applications

While your printer is primarily a Windows printer, you can also print from a DOS software Programme using the Remote Control Panel utility provided in the supplied software CD-ROM.

This chapter includes:

- **About the Remote Control Panel**
- **Installing the Remote Control Panel**
- **Selecting Print Settings**

About the Remote Control Panel

DOS users have access to many printer features through specific DOS printer drivers; however, many software manufactures do not develop printer drivers for their software programmes. Your printer provides the software control panel for improved printer control when DOS printer drivers are not available or when certain print settings are not available through DOS software programmes.

NOTE: The printer's Remote Control Panel is not a printer driver. It should be used to set print settings that are not available through DOS software programmes. Printer drivers are supplied by the manufacturers of your DOS software programmes. If your DOS software Programme does not include a printer driver for your printer, contact the manufacturer of the software or use one of the alternate printer drivers.

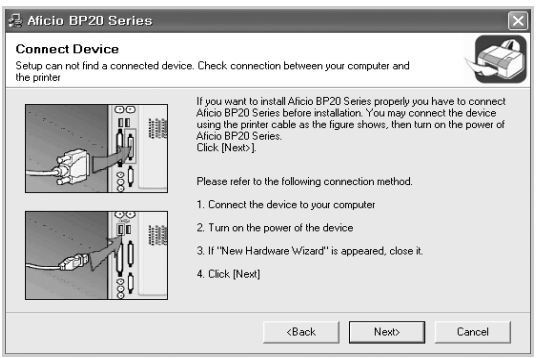
Installing the Remote Control Panel

1. Insert the supplied CD-ROM into your CD-ROM drive.

 The CD-ROM should automatically run and an maintenance window appears.

 If the maintenance window does not appear, click **Start** and then **Run**. Type **X:\Setup.exe**, replacing "**X**" with the letter of your drive and click **OK**.
2. Click **Next**.
3. Select **Custom installation**. Click **Next**.
4. Select your printer and click **Next**.

NOTES: If your printer is not already connected to the computer, the following window will appear.



- After connecting the printer, click **Next**.
- If you don't want to connect the printer at this time, click **Next**, and **No** on the following screen. Then the installation will start and a test page will not be printed at the end of the installation.

5 Check **Remote Control Panel** and then click **Next**.

6 When the installation is completed, click **Finish**.

Reinstalling Remote Control Panel

1 Start Windows.

2 From the **Start** menu, select **BP20 Series** in **Programs** and click **Maintenance**.

3 Select **Repair** and then click **Next**.

4 Check **Remote Control Panel** and then click **Next**.

5 When reinstallation is completed, click **Finish**.

Removing Remote Control Panel

1 Start Windows.

2 From the **Start** menu, select **BP20 Series** in **Programs** and click **Maintenance**.

3 Select **Remove** and then click **Next**.

4 Check **Set IP** and then click **Next**.

5 When your computer asks you to confirm your selection, click **Yes**.

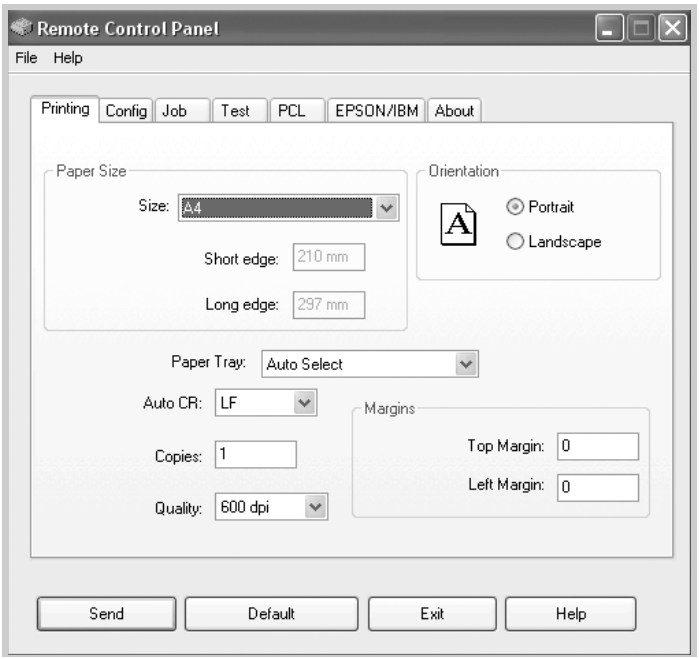
6 After the software is removed, click **Finish**.

Selecting Print Settings

You can use this Remote Control Panel to select print settings that may not be available on some DOS Programmes. Typically, duplicate print settings that are selected from a DOS software programme override the ones that are selected in the Remote Control Panel.

Starting the Remote Control Panel

1. From the **Start** menu, select **Programs**.
2. Select **BP20 Series** and then **Remote Control Panel**.
3. The Remote Control Panel window allows you to access all the information you need when using your printer. If necessary, click the other tabs on the top of the window to access other features.



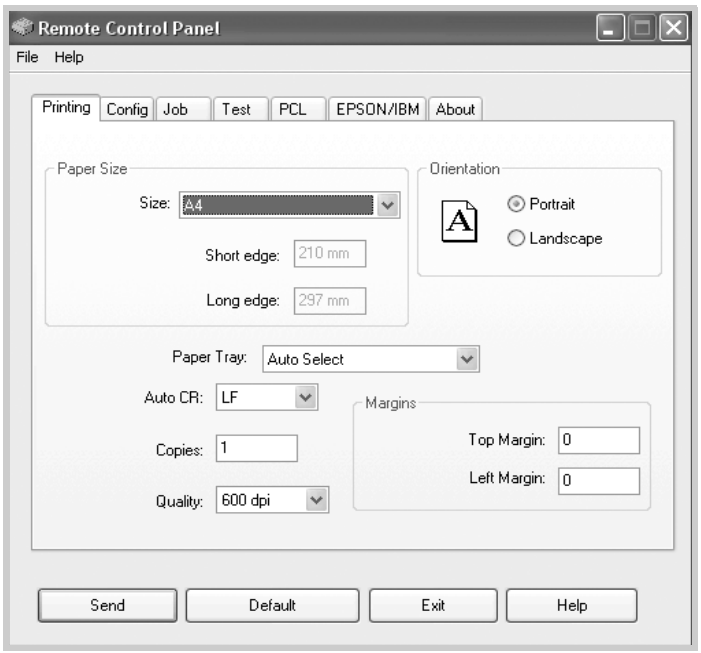
4. When you finish changing the settings, click **Send**.

Using the Remote Control Panel Tabs

The Remote Control Panel allows you to access the following features:

Printing Tab

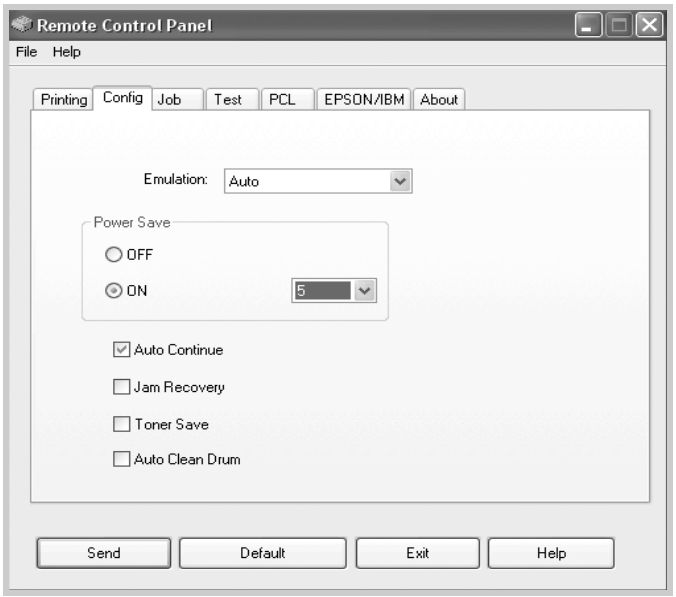
In this tab, you can configure general settings for printing.



- **Paper Size** sets the paper size.
- **Orientation** determines how the output is printed on the page.
- **Paper Tray** sets the default paper source.
- **Auto CR** sets how the printer performs a carriage return.
- **Copies** sets the number of copies printed for each page.
- **Quality** specifies the print quality.
- **Margins** sets the top and left margin of the print material.

Config Tab

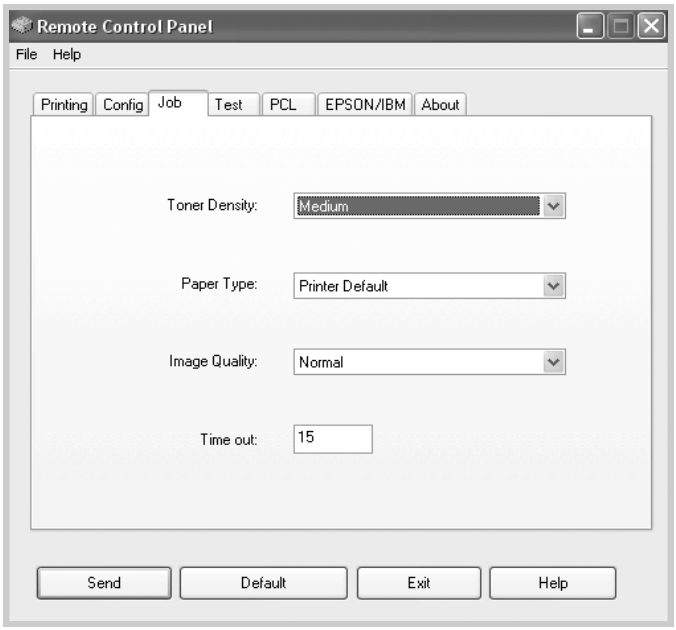
You can configure various printer features.



- **Emulation** selects the emulation for printing a document. The factory default is **Auto**.
- **Power Save** determines the length of time the printer waits after a job is printed before it goes to a reduced power state. If the printer is used frequently, select **OFF** which keeps the printer ready to print with the minimum warm-up time. This uses more power to keep the printer warm and ready to print.
- **Auto Continue** determines what action the printer should take if the Multi-Purpose Tray is empty when a manual feed print job is sent to the printer. If it is checked, the printer will pick up the paper from the tray 1 after fifteen seconds. Otherwise, the printer will wait for you to load paper in the Multi-Purpose Tray.
- **Jam Recovery** determines what action the printer should take when a paper jam occurs. If it is unchecked, the printer does not reprint a page that has jammed. If it is checked, the printer keeps the image in memory for a printed page until the printer signals that the page has successfully printed. The printer reprints all jammed pages.
- **Toner save** determines the toner quantity the printer should use when printing. If it is checked, the printer conserves toner when printing. The default value is unchecked, which provides 100% usage.
- **Auto Clean Drum** makes the printer print out a cleaning sheet which clean the drum inside the toner cartridge automatically every 500 print pages. This feature activates as a default depending on the country.

Job Tab

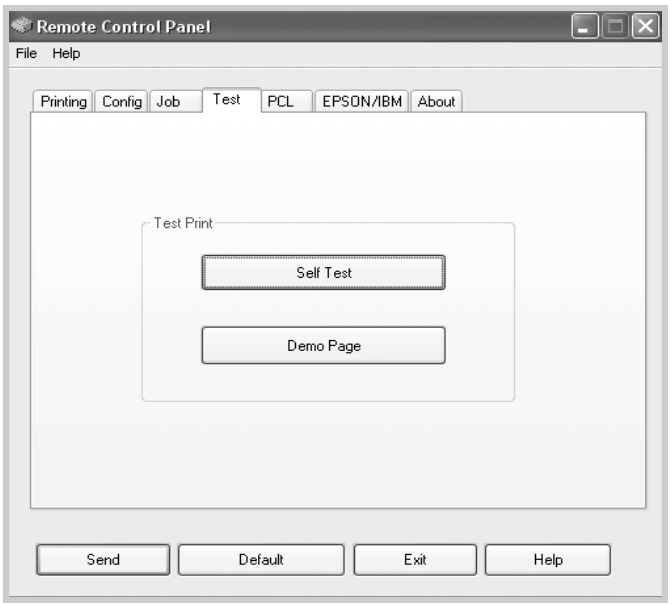
You can set options for improving the quality of your print job.



- **Toner Density** determines the toner density of the page. The default value is **Medium**.
- **Paper Type** provides the printer with information about the type of paper to be used for a print job. For the best result, set this to the paper type you loaded in the tray of the printer. When using plain paper, set this to **Printer Default**.
- **Image Quality** improves the print quality of your text and image and make the characters and images appear smoother. It is preset to **Normal** at the factory.
- **Time out** determins the amount of time (in seconds) the printer will wait before printing the last page of a print job that does not end with a command to print the page or a formfeed character. You can set from 0 to 300 seconds.

Test Tab

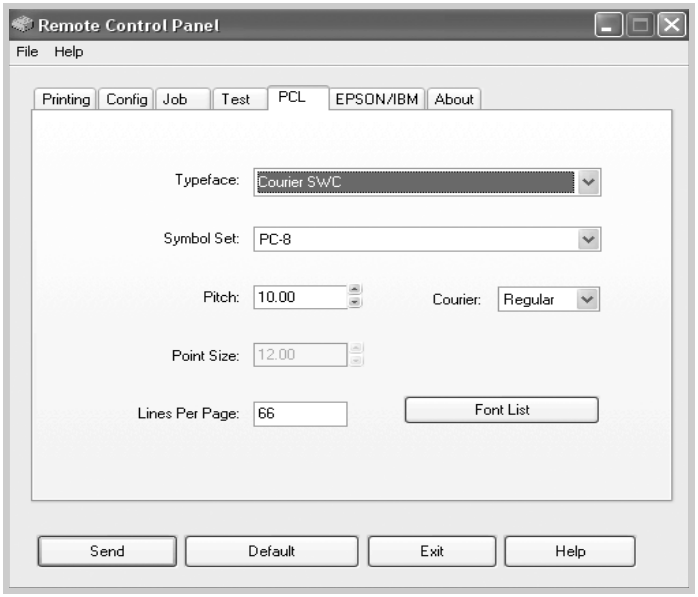
This tab allows you to print a resident page to test your printer's performance.



- **Self Test** prints a configuration sheet. A list of the user default settings and the amount of printer memory available prints.
- **Demo Page** prints a demonstration page. It shows the printer features and specifications.

PCL Tab

In this tab, you can configure various settings for PCL emulation.



- **Typeface** allows you to select the desired typeface. This setting is ignored when the software application specifies a font.
- **Symbol Set** determines the symbol set. A symbol set is a set of alphabetic and numeric characters, punctuation, and special symbols used when printing with a selected font.
- **Pitch** sets the font pitch (only if you have selected a scalable monospaced font). Pitch refers to the number of fixed-space characters in one horizontal inch of type.
- **Point Size** sets the font point size (only if you have selected a scalable typographic font). Point size refers to the height of the characters in the font. One point equals approximately 1/72 of an inch. You can select point sizes from 4.0 to 999.75 in increments of 0.25 points.
- **Lines Per Page** sets the number of lines that print on each page. The setting can range from 5 to 128 lines per page.
- **Courier** determines the courier font type; **Regular** or **Dark**.
- **Font List** prints a font list showing all the fonts available for PCL emulation.

MEMO

B

Installing Printer Options

Your printer is a full-featured laser printer that has been optimised to meet most of your printing needs. Recognizing that each user may have different requirements, however, Ricoh makes several options available to enhance the printer's capabilities.

This chapter includes:

- **Precautions When Installing Printer Options**
- **Installing Memory**
- **Installing an Optional Paper Tray**

Precautions When Installing Printer Options

DISCONNECT THE POWER CORD:

Never remove the printer control board while the printer is plugged in.

To avoid the possibility of an electrical shock, always disconnect the power cord when installing or removing ANY internal or external printer option.

DISCHARGE STATIC ELECTRICITY:

The control board and internal printer option (Memory) are sensitive to static electricity. Before installing or removing an internal option, discharge static electricity from your body by touching something metal, such as the metal back plate on any device plugged into a grounded power source. If you walk round before finishing installation, discharge any static electricity once again.

OPTIONS:

Check the items you want purchase. Refer to the table below.

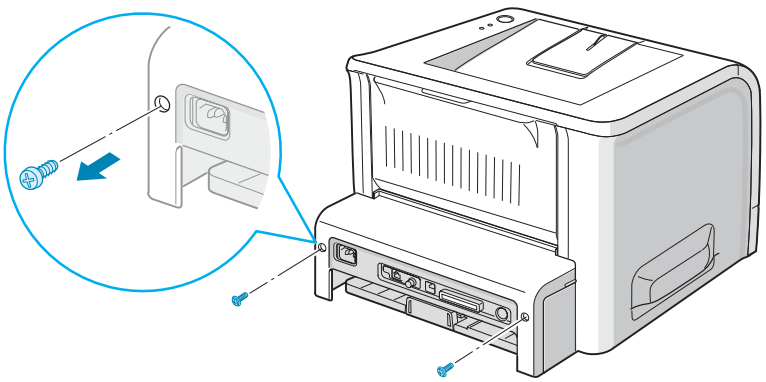
Item
Memory DIMM
250-sheet Paper Cassette Tray

Installing Memory

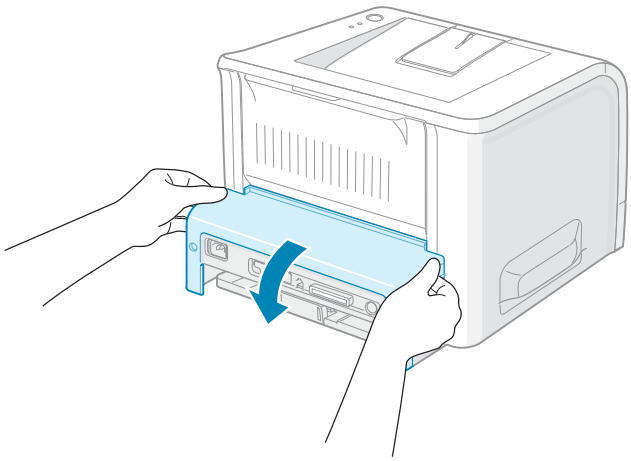
Additional printer memory is provided on DIMM(Dual In-line Memory Module).

1. Turn the printer power off and unplug all cables from the printer.

2. Remove the two screws on the back of the printer.

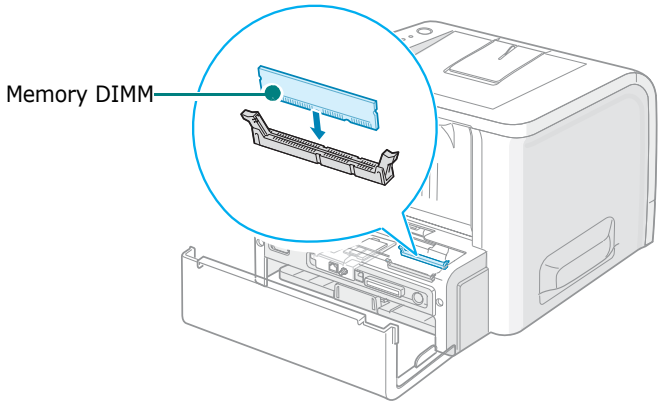


3. Open the control board cover.

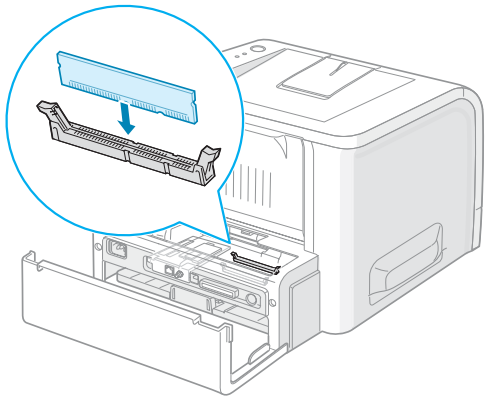


B

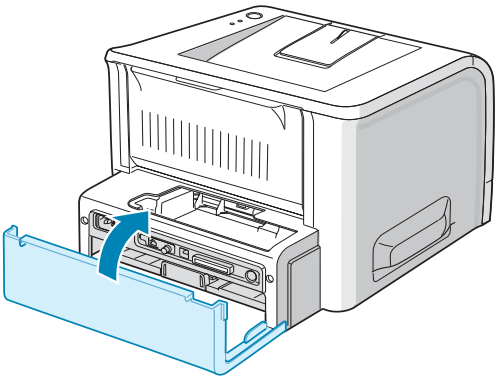
4 Locate the memory DIMM slot (the upper slot) on the control board.



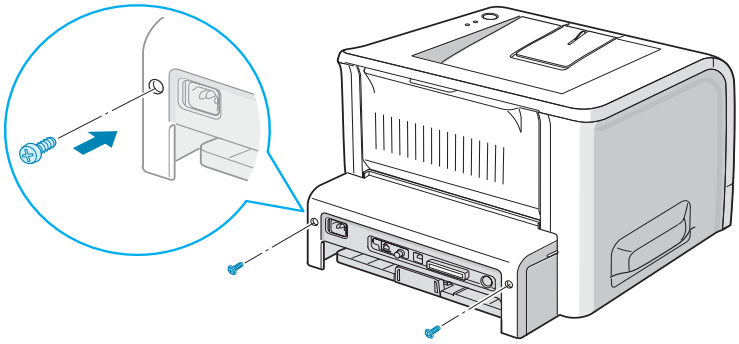
5 Hold the memory DIMM so that the notch and the connection point are aligned with the slot as shown, and insert it all the way into the upper slot.



6 Close the control board cover.



7 Tighten the two screws.

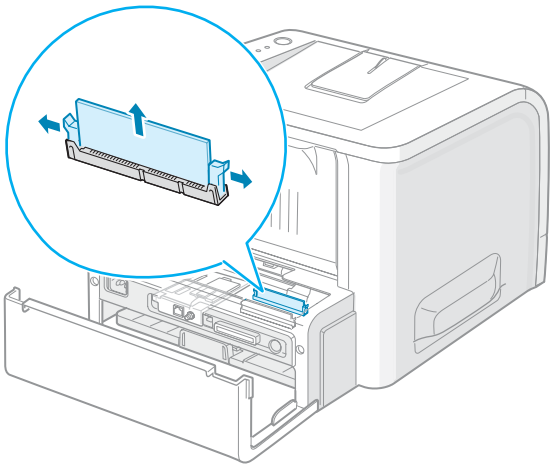


8 Reconnect the power cord and printer cable, and turn the printer on.

Removing the Memory

1. Follow steps 1 through 3 on page B.3 to access the control board.

2. Push the clips at each end of the connector slot away from the DIMM.



3. Place the DIMM in its original packaging or wrap it with paper and store it in a box.

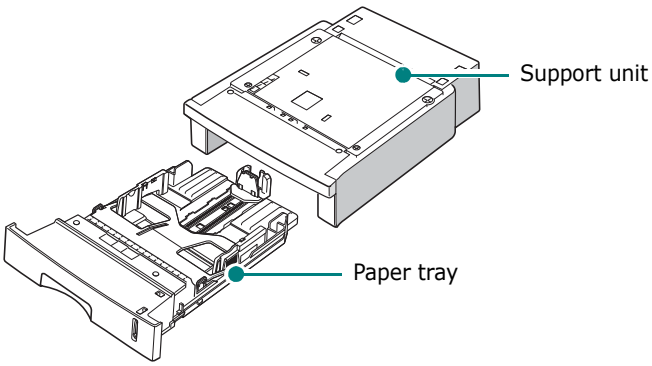
4. Close the control board cover.

5. Tighten the two screws.

6. Reconnect the power cord and printer cable, and turn the printer on.

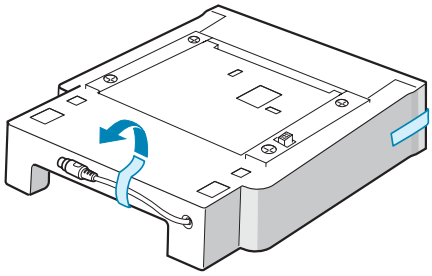
Installing an Optional Paper Tray

You can increase the paper handling capacity of your printer by installing an optional Tray2. The optional paper tray consists of two components; the support unit and the paper tray.

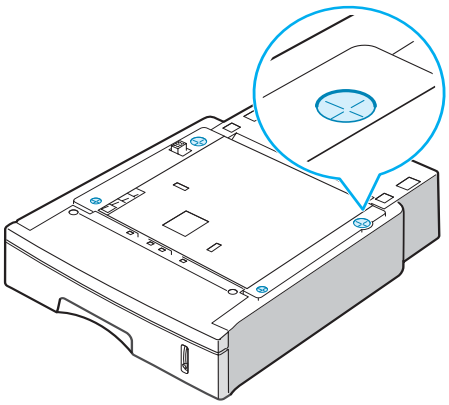


1 Turn off the printer and unplug all cables from the printer.

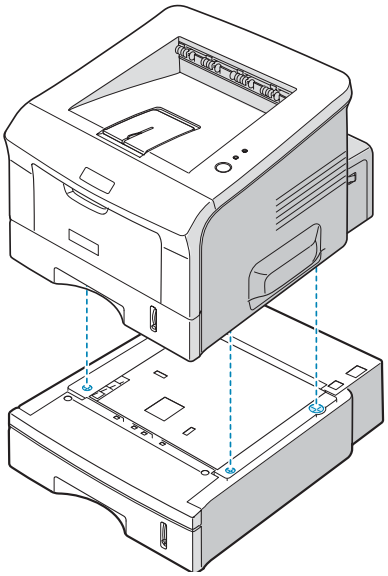
2 Remove the tape fastening the interface cable from the bottom of the support unit.



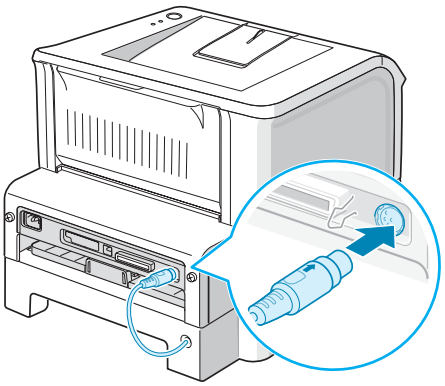
3 Observe the location of the support unit's tabs.



4 Align the printer with the support unit and lower it into place on the tabs.



5 Plug the cable into the connector on the back of the printer.



6 Load paper in Tray2. For information about loading paper in the tray, see page 2.7.

7 Reconnect the power cord and cables and then turn the printer on.

NOTES:

- When you print a document, configure the printer driver from your application. To access the printer driver, see page 4.2.
- Do not remove Tray 1 from the printer while you are printing using the optional Tray 2. If you do this, a paper jam may occur. Use the optional Tray 2 with Tray 1 in place.

C SPECIFICATIONS

This chapter includes:

- **Printer Specifications**
- **Paper Specifications**

Printer Specifications

Item	Specifications and Description
Print Speed *	Up to 20 ppm in A4 (22 ppm in Letter)
Resolution	Up to 1200 x 1200 dpi effective output
First Printing Time	10 seconds (from Ready)
Warm-up Time	Less than 40 seconds
Power Rating	AC 110 ~ 127 V (USA, Canada) / 220 ~ 240 V (Others) 50 / 60 Hz
Power Consumption	400 W average during operation Less than 15 W in sleep mode
Noise Level **	Less than 39 dBA (Standby) Less than 53 dBA (Printing)
Toner Supply	Single cartridge
Toner Cartridge Life	5,000 pages(for starter, 3,500 pages) @ ISO 19752 5% Coverage
Duty Cycle, Monthly	Up to 30,000 pages
Weight	10.2 Kg (Including consumable)
Package Weight	Paper: 2.1 Kg Plastic: 0.4 Kg
External Dimensions (W x D x H)	358 x 467 x 278 mm (14.1” x 18.4” x 10.9”)
Operating Environment	Temperature:10 ~ 32 °C / 50 ~ 90 °F Humidity: 20 ~ 80 % RH
Emulation	PCL 6
Random Access Memory (RAM)	16 MB (Max. 144 MB)
Fonts	1 bitmap, 45 scalable
Interface	BP20 : USB 2.0, IEEE 1284 Parallel
	BP20N : USB 2.0, IEEE 1284 Parallel, Ethernet 10/100Base TX
OS Compatibility	Windows 95/98/Me/NT 4.0/2000/XP
Options	Memory available: 32 MB, 128 MB
	250-sheet Paper Cassette Tray

* *Print speed will be affected by Operating system used, computing performance, application software, connecting method, media type, media size and job complexity.*

** *Sound Pressure Level, ISO 7779*

Paper Specifications

Overview

Your printer accepts a variety of print materials, such as cut-sheet paper (including up to 100% recycled fiber content paper), envelopes, labels, transparencies, and custom-size paper. Properties, such as weight, composition, grain, and moisture content, are important factors affecting the printer's performance and the output quality. Paper that does not meet the guidelines outlined in this User's Guide can cause the following problems:

- Poor print quality
- Increased paper jams
- Premature wear on the printer.



NOTES:

- Some paper may meet all of the guidelines in this guide and still not produce satisfactory results. This may be the result of improper handling, unacceptable temperature and humidity levels, or other variables over which manufacturer has no control.
- Before purchasing large quantities of paper, ensure that the paper meets the requirements specified in this User's Guide.
- Using paper that does not meet these specifications may cause problems, requiring repairs. These repairs are not covered by the manufacturer's warranty or service agreements.

Supported Sizes of Paper

Tray1/ Tray2	Dimensions[a]	Weight	Capacity[b]
Letter	216 X 279 mm (8.5 X 11 in.)	60 to 90 g/m^2 bond (16 to 24 lb)	250 sheets of 75 g/m^2 bond paper
A4	210 X 297 mm (8.3 X 11.7 in.)		
A5	148 x 210 mm (5.8 x 8.2 in.)		
Executive	184 X 267 mm (7.25 X 10.5 in.)		
Legal	216 X 356 mm (8.5 X 14 in.)		
B5 (JIS)	182 X 257 mm (7.2 X 10 in.)		
B5 (ISO)	176 x 250 mm (6.7 x 9.9 in.)		
Oficio	216 x 343 mm (8.5 x 13.5 in.)		
Folio	216 X 330 mm (8.5 X 13 in.)		

Multi-Purpose Tray	Dimensions[a]	Weight	Capacity[b]
Minimum Size (custom)	76 X 127 mm (3 X 5 in.)	60 to 163 g/m^2 bond (16 to 43 lb)	50 sheets of 75 g/m^2 bond paper
Maximum Size (custom)	216 X 356 mm (8.5 X 14 in.)		
Transparency	Same minimum and maximum paper sizes as listed above.	138 to 148 g/m^2 bond (36.7 to 39.4 lb)	5 typical
Labels[c]		120 to 150 g/m^2 bond (32 to 40 lb)	5 typical
Envelopes		up to 90 g/m^2 (16 to 24 lb)	up to 5

a The printer supports a wide range of media sizes. See "Printing on Card Stock or Custom-sized Materials" on page 3.21.
b Capacity may vary depending on media weight and thickness, and environmental conditions.
c Smoothness: 100 to 250 (Sheffield)

NOTE: You may experience jams when using print materials with a length of less than 127 mm (5.0 in.). For optimum performance, ensure that you are storing and handling the paper correctly. Please refer to "Printer and Paper Storage Environment" on page C.7.

Guidelines for Using Paper

For the best result, use conventional 75 g/m^2 (20 lb) paper. Ensure that the paper is of good quality, and free of cuts, nicks, tears, spots, loose particles, dust, wrinkles, voids, and curled or bent edges.

If you are unsure of what type of paper you are loading, such as bond or recycled paper, check the label on the package.

The following problems may cause print quality deviations, jamming, or even damage to the printer.

Symptom	Problem with Paper	Solution
Poor print quality or toner adhesion, problems with feeding	Too moist, too rough, too smooth, or embossed; faulty paper lot	Try another kind of paper, between 100 ~ 250 Sheffield, 4 ~ 5 % moisture content.
Dropout, jamming, curl	Stored improperly	Store paper flat in its moisture-proof wrapping.
Increased gray background shading/printer wear	Too heavy	Use lighter paper, open the rear output tray.
Excessive curl problems with feeding	Too moist, wrong grain direction, or short-grain construction	• Open the rear output tray. • Use long-grain paper.
Jamming, damage to printer	Cutouts or perforations	Do not use paper with cutouts or perforations.
Problems with feeding	Ragged edges	Use good quality paper.

NOTES:

- Do not use letterhead paper printed with low-temperature inks, such as those used in some types of thermography.
- Do not use raised or embossed letterhead.
- The printer uses heat and pressure to fuse toner to the paper. Insure that any coloured paper or preprinted forms use inks that are compatible with this fusing temperature (205 °C or 400 °F for 0.1 second).

Paper Specifications

Category	Specifications
Acid Content	5.5 ~ 8.0 pH
Caliper	0.094 ~ 0.18 mm (3.0 ~ 7.0 mils)
Curl in Ream	Flat within 5 mm (0.02 in.)
Cut Edge Conditions	Cut with sharp blades with no visible fray.
Fusing Compatibility	Must not scorch, melt, offset, or release hazardous emissions when heated to 205 °C (400 °F) for 0.1 second.
Grain	Long Grain
Moisture Content	4 % ~ 6 % by weight
Smoothness	100 ~ 250 Sheffield

Paper Output Capacity

Output Tray	Capacity
Face-down top output tray	150 sheets of 75 g/m^2 bond paper
Face-up rear output tray	a sheet of 75 g/m^2 bond paper

Printer and Paper Storage Environment

Paper storage environment conditions directly affect the feed operation.

Ideally, the printer and paper storage environment should be at or near room temperature, and not too dry or humid. Remember that paper is hygroscopic; it absorbs and loses moisture rapidly.

Heat works with humidity to damage paper. Heat causes the moisture in paper to evaporate, while cold causes it to condense on the sheets. Heating systems and air conditioners remove most of the humidity from a room. As paper is opened and used, it loses moisture, causing streaks and smudging. Humid weather or water coolers can cause the humidity to increase in a room. As paper is opened and used it absorbs any excess moisture, causing light print and dropouts. Also, as paper loses and gains moisture it can become distorted. This can cause paper jams.

Care should be taken not to purchase more paper than can be used in a short time (about 3 months). Paper stored for long periods may experience heat and moisture extremes, which can cause damage. Planning is important to prevent damage to large supplies of paper.

Unopened paper in sealed reams can remain stable for several months before use. Opened packages of paper have more potential for environment damage, especially if they are not wrapped with a moisture-proof barrier.

The paper storage environment should be properly maintained to ensure optimum printer performance. The optimum condition is 20° to 24°C (68° to 75°F), with a relative humidity of 45% to 55%. The following guidelines should be considered when evaluating the paper's storage environment:

- Paper should be stored at or near room temperature.
- The air should not be too dry or too humid.
- The best way to store an opened ream of paper is to rewrap it tightly in its moisture-proof wrapping. If the printer environment is subject to extremes, unwrap only the amount of paper to be used during the day's operation to prevent unwanted moisture changes.

Envelopes

Envelope construction is critical. Envelope fold lines can vary considerably, not only between manufacturers, but also within a box from the same manufacturer. Successful printing on envelopes depends upon the quality of the envelopes. When selecting envelopes, consider the following components:

- Weight: The weight of the envelope paper should not exceed 90 g/m^2 (24 lb) or jamming may occur.
- Construction: Prior to printing, envelopes should lie flat with less than 6 mm (0.25 in.) curl, and should not contain air.
- Condition: Envelopes should not be wrinkled, nicked, or otherwise damaged.
- Temperature: You should use envelopes that are compatible with the heat and pressure of the printer.
- Size: You should only use envelopes within the following size ranges.

	Minimum	Maximum
Multi-Purpose Tray	76 X 127 mm (3 X 5 in.)	216 X 356 mm (8.5 X 14 in.)

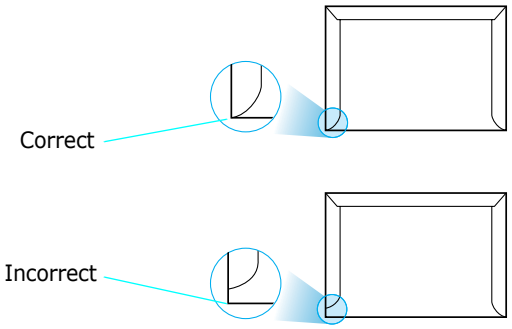


NOTES:

- Use only the Multi-Purpose Tray to print envelopes.
- You may experience some paper jams when using any media with a length less than 127 mm (5.0 in.). This may be caused by paper that has been affected by environmental conditions. For optimum performance, make sure you are storing and handling the paper correctly. Please refer to "Printer and Paper Storage Environment" on page C.7.

Envelopes with Double Side Seams

Double side-seam construction has vertical seams at both ends of the envelope rather than diagonal seams. This style may be more likely to wrinkle. Be sure the seam extends all the way to the corner of the envelope as illustrated below.



Envelopes with Adhesive Strips or Flaps

Envelopes with a peel-off adhesive strip or with more than one flap that folds over to seal must use adhesives compatible with the heat and pressure in the printer. The extra flaps and strips might cause wrinkling, creasing, or even jams and may even damage the fuser.

Envelope Margins

The following gives typical address margins for a commercial #10 or DL envelope.

Type of Address	Minimum	Maximum
Return address	15 mm (0.6 in.)	51 mm (2 in.)
Delivery address	51 mm (2 in.)	89 mm (3.5 in.)

NOTES:

- For best print quality, position margins no closer than 15 mm (0.6 in.) from the edges of the envelope.
- Avoid printing over the area where the envelope's seams meet.

Envelope Storage

Proper storage of envelopes helps contribute to print quality. Envelopes should be stored flat. If air is trapped in an envelope, creating an air bubble, then the envelope may wrinkle during printing. See "Printing on Envelopes" on page 3.14.

Labels

NOTES:

- To avoid damaging the printer, use only labels recommended for laser printers.
- To prevent serious jams, always use the Multi-Purpose Tray to print labels and always use the rear output tray.
- Never print on the same sheet of labels more than once and never print on a partial sheet of labels.

When selecting labels, consider the quality of each component:

- Adhesives: The adhesive material should be stable at 200 °C (392 °F), the printer's fusing temperature.
- Arrangement: Only use labels with no exposed backing between them. Labels can peel off sheets with spaces between the labels, causing serious jams.
- Curl: Prior to printing, labels must lie flat with no more than 13 mm (.5 in.) of curl in any direction.
- Condition: Do not use labels with wrinkles, bubbles, or other indications of separation.

See "Printing on Labels" on page 3.17.

Transparencies

Transparencies used in the printer must be able to withstand 170 °C (338 °F), the printer's fusing temperature.

NOTE: To avoid damaging the printer, use only transparencies recommended for use in laser printers.

See "Printing on Transparencies" on page 3.19.

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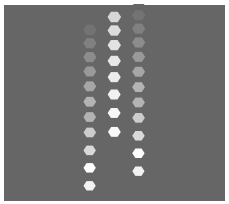
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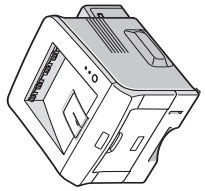
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